

TECHNOLOGY

REVIEW

February 1958

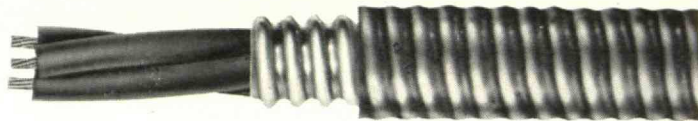


technology review

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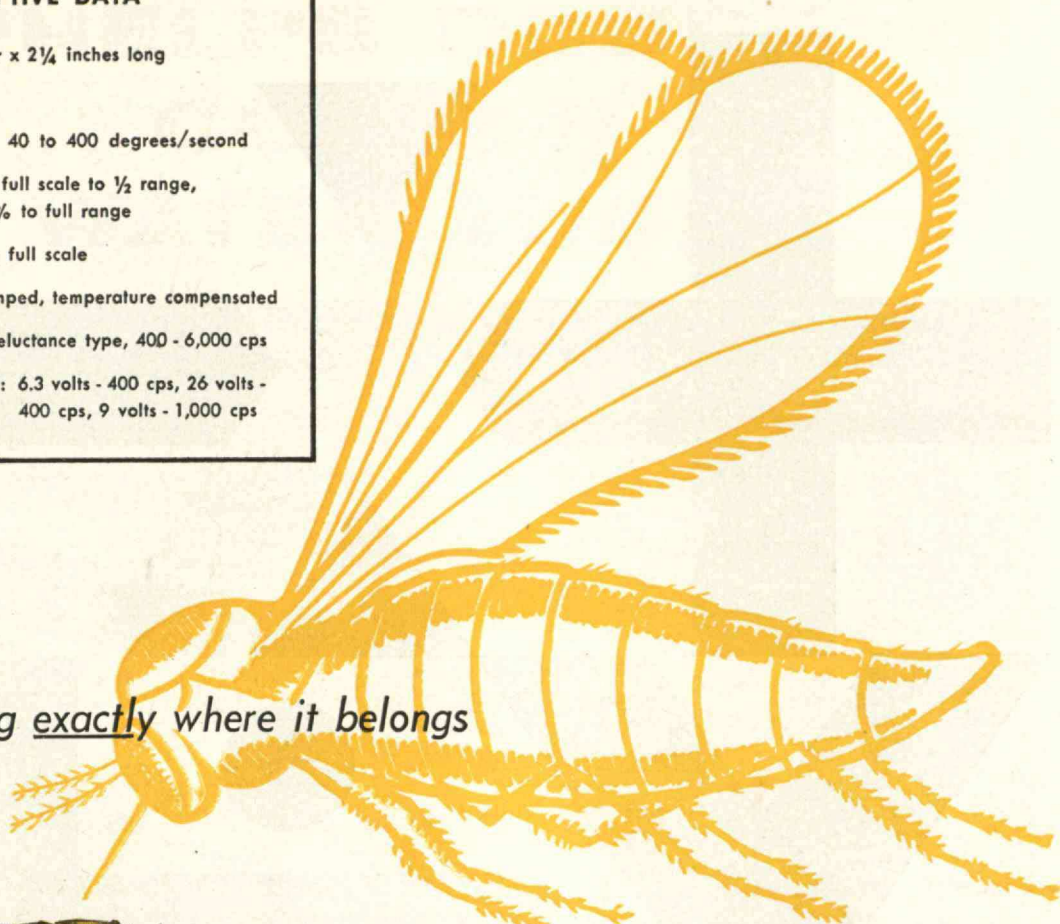
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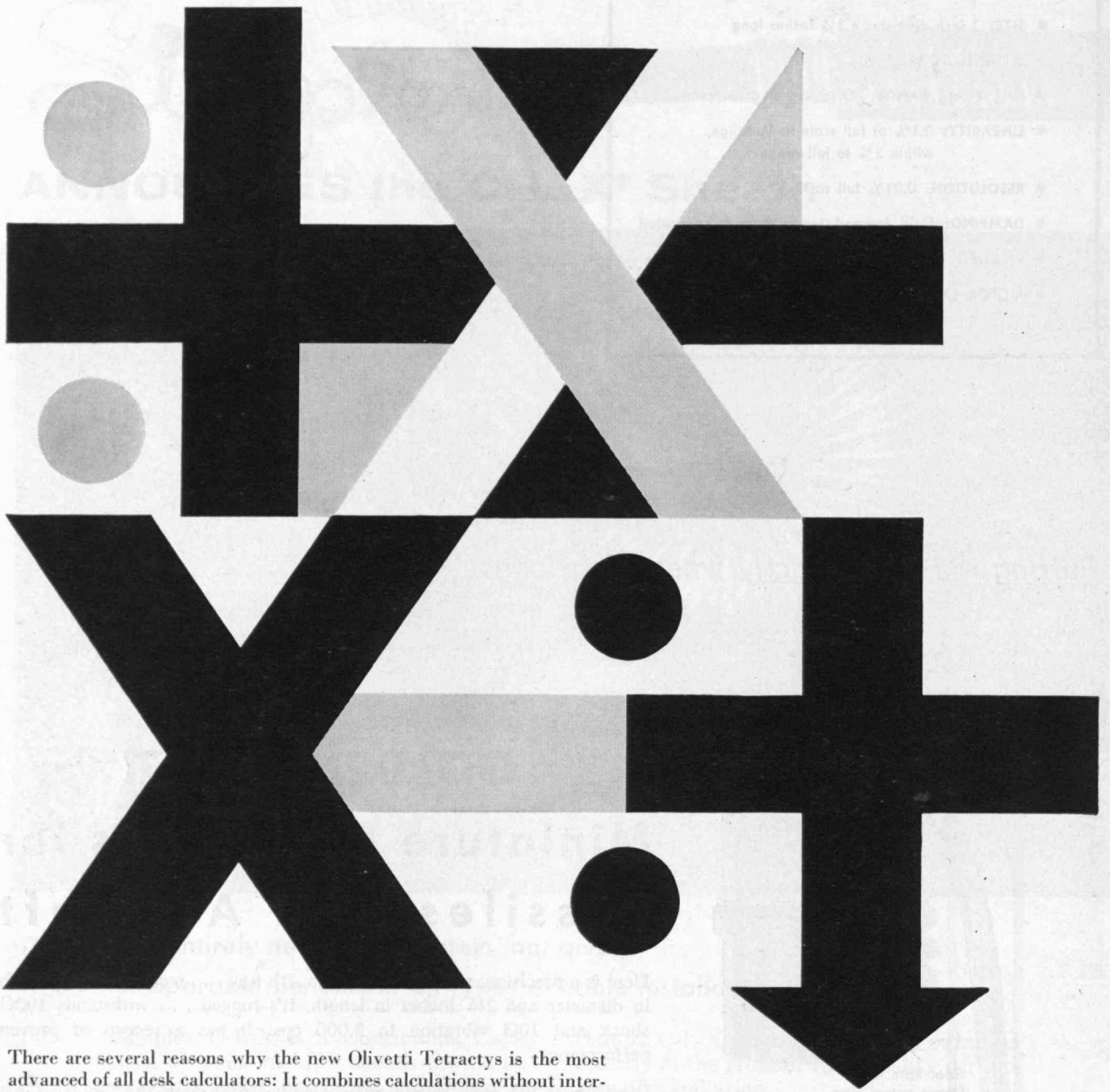
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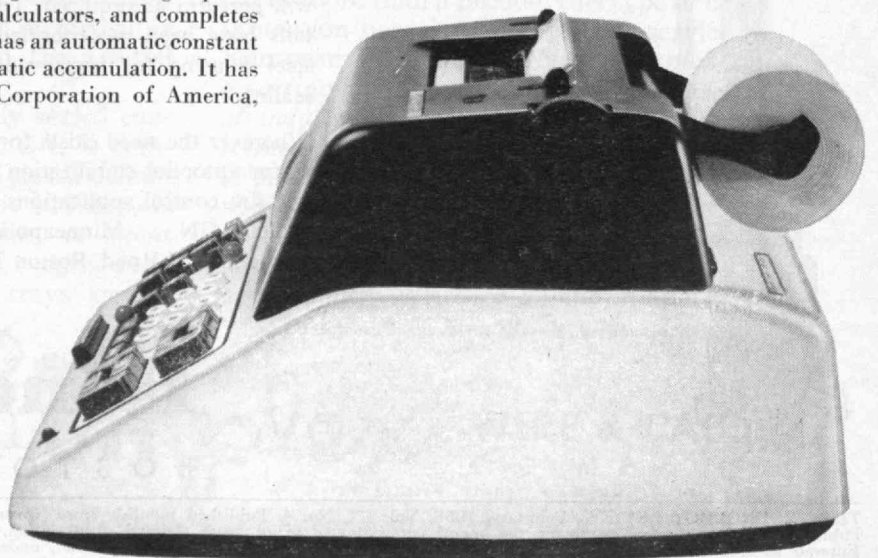
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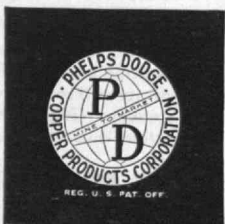
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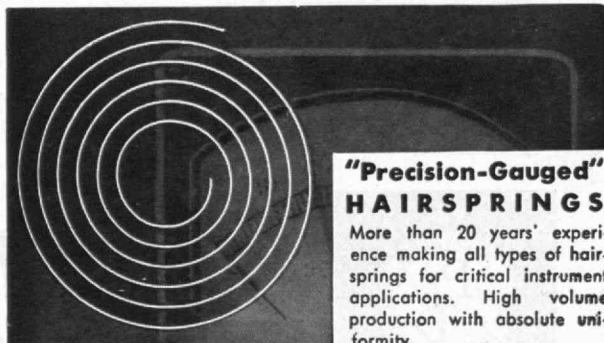
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THE TABULAR VIEW

Key to Leadership. — Major address of the Regional Conference held in Pittsburgh on December 7 was given by ACTING PRESIDENT J. A. STRATTON, '23, whose topic was "Universities — A Key to America's Leadership." Dr. Stratton's article in this issue of The Review (page 201) adapts for the printed page the major portion of that address, delivered on the anniversary of the Pearl Harbor attack and at a time when the nation was concerned with launching of two Russian satellites. Dr. Stratton critically analyzed the situation which confronts this nation. "We, in America," he said, "have been curiously plagued by the fear of an intellectual elite. . . . We have tended to distrust intellectual achievements that are not to be had by everyone on equal terms. There has been too little pride and understanding among Americans of the quality of excellence. . . . Let us not forget that the traditional function of the university is to teach and to provide teachers as well as to advance learning." Dr. Stratton is particularly well qualified to deal with this topic for he has been engaged in educational pursuits all his life. After one year at the University of Washington, Dr. Stratton came to M.I.T. where he received the S.B. degree in Electrical Engineering in 1923. He then spent a year at the Universities of Grenoble and Toulouse, and returned to M.I.T. as a research associate in electrical communications, receiving the S.M. degree in 1925. Dr. Stratton was appointed assistant professor of electrical engineering at M.I.T. in 1928. In 1930 he transferred to the Department of Physics and became professor of physics in 1941.

Following World War II, he established the M.I.T. Research Laboratory of Electronics and served as its head until 1949 when he was appointed to M.I.T.'s newly created post of Provost. He became vice-president and a member of the M.I.T. Corporation in 1951, and chancellor in 1956. Upon Dr. Killian's appointment as Special Adviser to the President for Science and Technology, Dr. Stratton was appointed acting president of M.I.T., in addition to his post as chancellor.

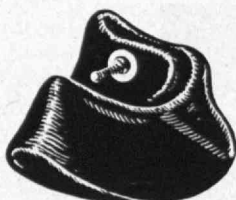
Invention in Flight. — The June, 1954, issue of The Review carried an article on the future of discovery and invention in which it was pointed out that "overemphasis on applied research at the present time, at the expense of research in basic science, is a practice well worth serious attention." In this issue (page 204) the same student of the development of science and technology, J. L. B. BLIZARD, '49, examines invention in the broad field of flight. It is concluded that greatest advancement occurs when there is full freedom to exchange ideas, and
(Concluded on page 186)



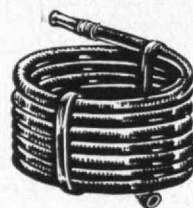
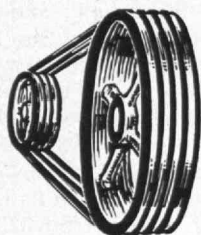
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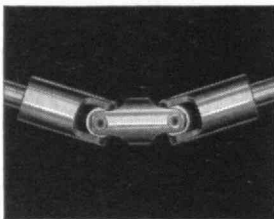
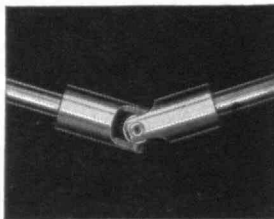
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THE TABULAR VIEW (Concluded from page 184)

that great possibilities lie ahead for the congregation of nations best able to utilize the benefits of its men of talent. In these days of intercontinental missiles and inter-service fizzles, these conclusions have more than purely academic interest. After receiving the A.B. degree with high honors from the University of Rochester in 1945 and the Ph.D. degree from M.I.T. in 1949, Dr. Blizard taught at Hofstra College, the University of Connecticut, and Vassar College, and has done medical research at the New England Institute for Medical Research. At present, Dr. Blizard is assistant physicist at the M. D. Anderson Cancer Hospital of the University of Texas.

Education in Russia. — For several years, ALEXANDER G. KOROL, in the Institute's Center for International Studies, has been engaged in a study of the Russian educational system, resulting in a book entitled *Soviet Education for Science and Technology*, which has recently been published jointly by The Technology Press and John Wiley and Sons, Inc. The article on page 208 of this issue is compiled from extracts of this volume and published with the approval of the author and the publisher. Admittedly, extracts selected from a longer work and pieced together can hardly do justice to the longer study. Yet The Review's condensation supports Mr. Korol's thesis that, designed solely to serve Party interests, the Soviet technical training is rugged, proficient, and skillfully used to expand Communist power in its war against the free democratic societies. It is not Soviet education that the free nations need fear, Mr. Korol concludes, but the misuse of power by the Communist Party. Mr. Korol is particularly well suited to a study of Russian education. He was born in Irkutsk in 1900, but came to the United States (of which he is a naturalized citizen) in 1920. He studied engineering at the University of Washington and has the A.B. and M.A. degrees in economics from Columbia University. In 1952 he received the Certificate in Soviet Studies from Columbia. In the summer of 1951 he was assistant to the Field Director of Harvard Refugee Interview Project. Since 1952 he has been a member of the Senior Research Staff at the Center for International Studies at M.I.T.

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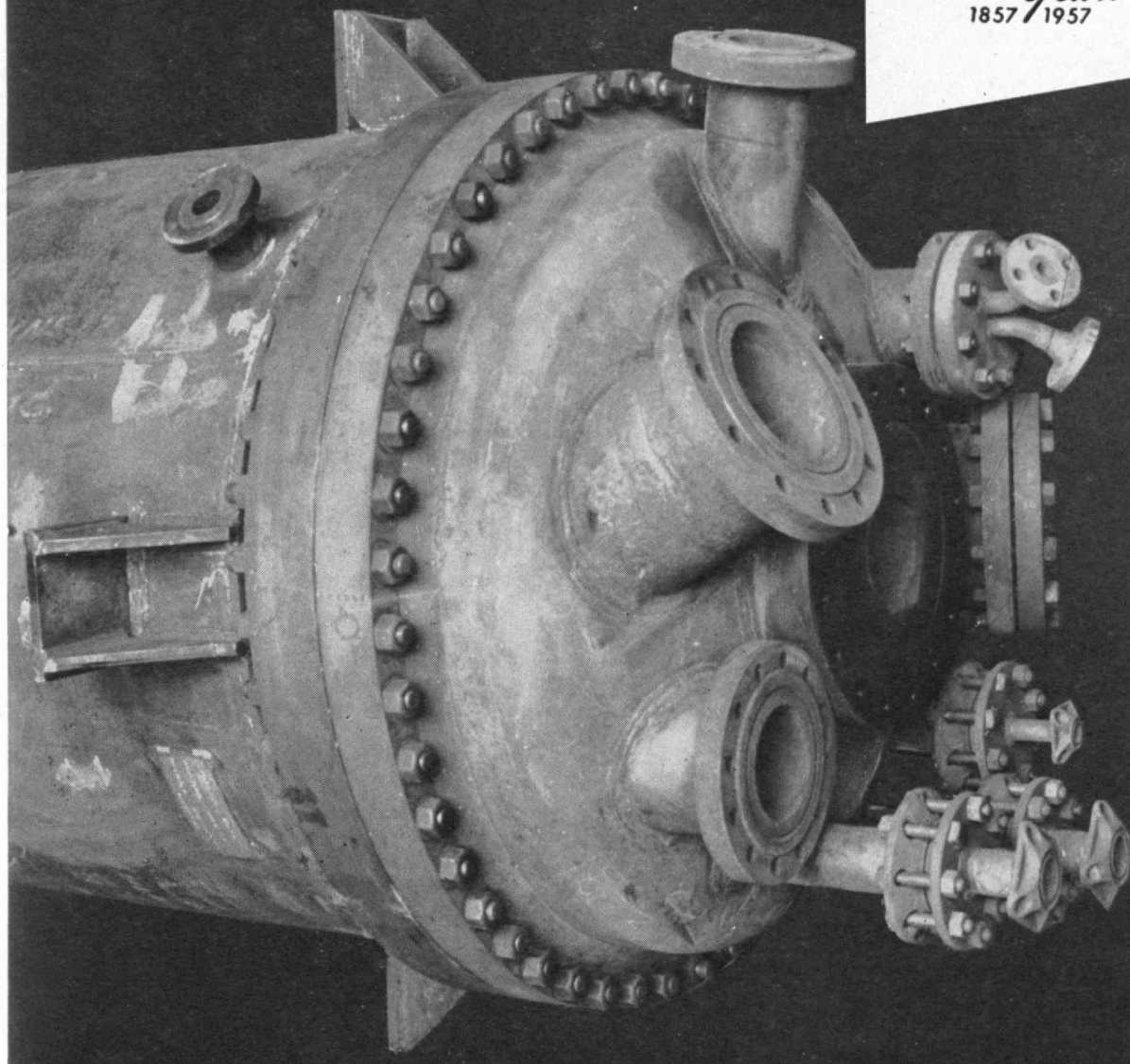
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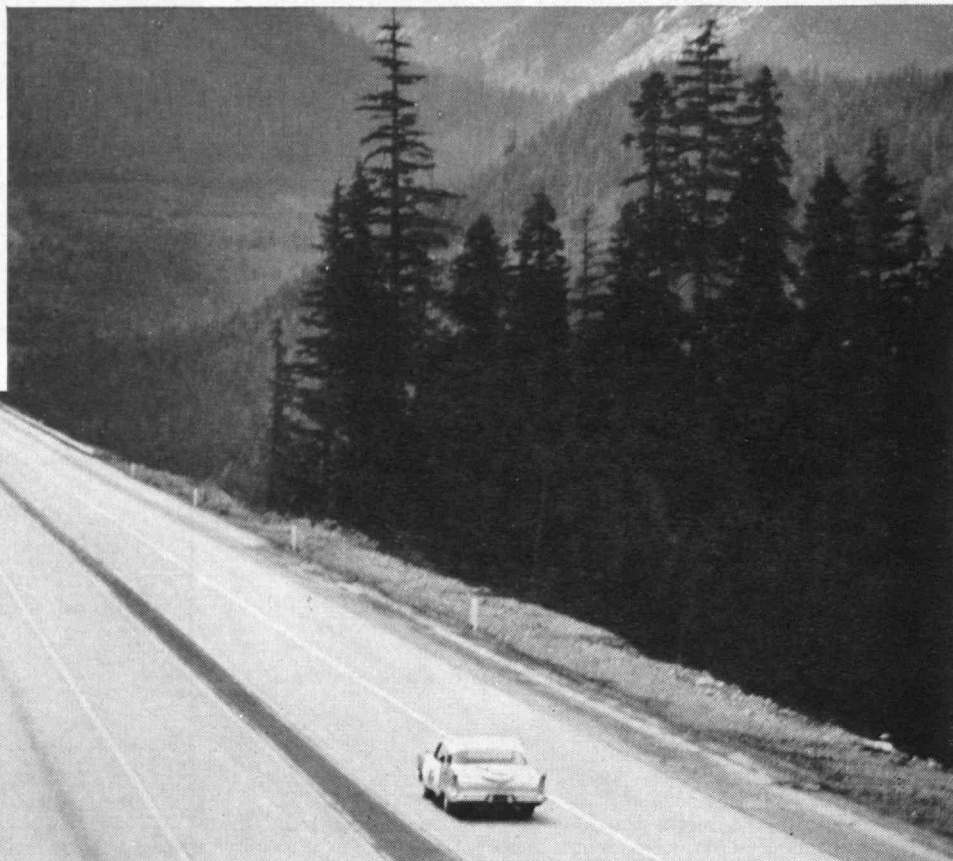


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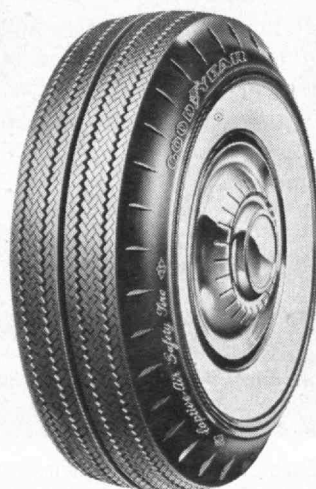
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Equestrian Statue of George Washington, Boston Public Garden

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— George Washington's first annual address to Congress

The Technology Review

VOL. 60, NO. 4 FEBRUARY, 1958

The Trend of Affairs

Pittsburgh Regional Conference

■ Coming on Pearl Harbor Day, and the day after Vanguard had sputtered and burned in Florida, the 11th Regional Conference, sponsored by the M.I.T. Club of Western Pennsylvania, found Alumni and speakers in a grave mood with respect to the problems of science and technology. The conference was held on December 7, 1957, at the Penn-Sheraton Hotel in Pittsburgh.

Edward J. Hanley, '24, and John Lawrence, '32, as co-chairmen of the Regional Conference, with Thomas I. Stephenson, 3d, '45, as deputy chairman, planned a particularly significant program in which six members of the Institute's Faculty traveled from Cambridge to Pittsburgh for this important event.

Speakers from the Institute included: Morris Cohen, '33, Professor of Physical Metallurgy, who spoke on "Metallurgy in Russia and America"; Irwin W. Sizer, Professor of Biochemistry, whose subject was "Life and Death at the Molecular Level"; George R. Harrison, Dean of the School of Science, speaking on "Science and the World Outlook"; Jerrold R. Zacharias, Professor of Physics, who talked on "Twentieth Century Physics in the High School"; E. P. Brooks, '17, Dean of the School of Industrial Management, who discussed "Today's Plans for Tomorrow's Management"; and J. A. Stratton, '23, Acting President of the Institute, who spoke on "Universities—A Key to America's Leadership." Dr. Stratton spoke in place of President Killian whose assignment, as Special Assistant to President Eisenhower for Science and Technology, prevented his attendance at the conference. B. Richard Teare, Jr., Dean of Engineering and Science, Carnegie Institute of Technology, presided at the morning session, and Max A. Lauffer, Dean of the Division of Sciences, University of Pittsburgh, presided at the afternoon session.

Of special interest to Pittsburgh technologists was a report from Professor Cohen on what he had seen in a recent tour of Russian steel mills, laboratories, and technological institutes.

"In Moscow alone," he said, "there are 4,500 students studying metallurgy and this is more than we have in the entire country, both graduate and under-

graduate. The Soviets are training metallurgists seven times faster than we are.

"Metallurgy," he observed, "sits just about at the top of the heap" of Russian technology and "the main thing to keep in mind is that the bulk of steel production is being plowed back into the industrial system . . . Sputniks and atomic-powered icebreakers represent only 10 per cent of the technological potential—the part of the iceberg that is visible. The other 90 per cent, which we do not see, is a solidly based educational system and love for knowledge."

Conference registrants also heard an informative, illustrated address by Professor Sizer, Head of the Department of Biology. New research in the life sciences was described by Dr. Sizer, whose article in the June, 1957, issue of *The Review* covered similar subjects.

Dean Harrison gave what might be considered the keynote speech at the luncheon, saying: "I believe the next two years are the most dangerous in the history of free society, and that the decade after that will show only a slow relaxation of the danger, and that only if Americans wake up faster than we are waking up at present.

"Khrushchev has already announced that the Russians have won the technological race, and if we keep on the course we are still heading in, he is right.

"The missile problem is only a small part of the difficulty. Slowly, under the influence of increasing wealth, the moral fiber of America has been tenderized by the sweet acids of success."

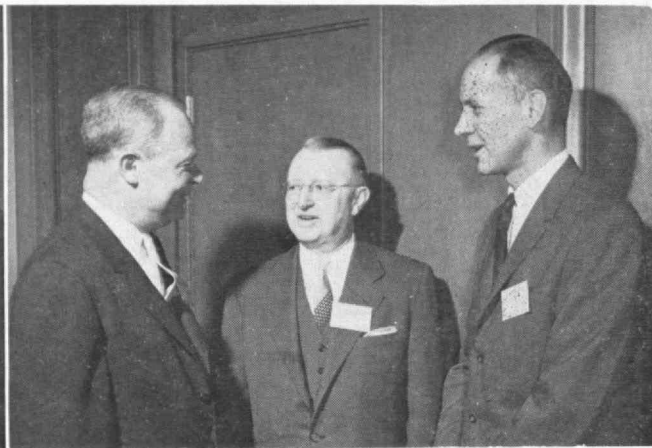
In the afternoon session, Professor Zacharias, chairman of a recently established Physical Science Study Committee, gave a stimulating account of the work of this committee whose assignment includes preparation of a new high school textbook on physics, a teacher's manual, films, and inexpensive and easily constructed laboratory apparatus which high school students can build to investigate the nature of the physical world. Early work of the Physical Science Study Committee was reported by Dr. Zacharias in the July, 1957, issue of *The Review*.

Dean Brooks developed the theme that tomorrow's industrial leaders must be prepared to cope with the phenomenon of bigness, with increased use of capital



Associated Photographers

A few of the many Alumni who played prominent roles in the Regional Conference held at Pittsburgh on December 7 are shown on this page. At the left, the Institute's Acting President J. A. Stratton, '23 (left), congratulates Irving W. Wilson, '11 (center), who received citation from Alumni Association President Gilbert M. Roddy, '31 (right). Right-hand illustration shows Edward J. Hanley, '24, General Co-Chairman of the conference (left), William J. Sherry, '21, who arranged last year's (February 2) conference in Tulsa (center), and J. Robert Ferguson, Jr., '37, of Pittsburgh.



and labor in the production process, and with many technical, social, and economic complexities brought about by research in other fields. Relating his message specifically to recent world events, Dean Brooks declared that Sputnik is also a challenge to management, saying, "In order to rewin supremacy, we will need to make a great scientific and technological effort. But the effort will not be enough unless it is well administered."

Raymond Mancha, '26, was toastmaster at the banquet in the evening, at which Acting President Stratton expressed serious concern with general and technological education in the United States. His address appears on page 201 of this issue of *The Review*.

During the dinner, Gilbert M. Roddy, '31, President of the Alumni Association, presented a citation to Irving W. Wilson, '11, chairman of the board of the Aluminum Company of America. Mr. Roddy described Mr. Wilson as a "loyal alumnus of the Class of 1911, an electromechanical engineer and captain of industry distinguished for his steadfast devotion to the advancement of education and society."



Associated Photographers

Thomas I. Stephenson, 3d, '45, (left), Deputy Chairman of the Pittsburgh Regional Conference and President of the M.I.T. Club of Western Pennsylvania; Ralph V. Davies, '16 (center), member, Regional Conference Steering Committee; and Raymond Mancha, '26, toastmaster at the evening banquet (right).

Responding, Mr. Wilson said, "Fifty years ago I had no realization of what my choice of schools would mean to me. In looking back, however, I can now say that I could not possibly have been better advised or more fortunate in that selection. Throughout the years that have followed, M.I.T. has had an ever-increasing place in my affection and esteem."

International Communications

■ Daniel Lerner, a leading sociologist and educator, has been appointed to a new professorship in international communication in the Department of Economics and Social Science. His appointment to the new chair, established under a 1956 Ford Foundation grant, was announced early in December by J. A. Stratton, '23, Acting President of M.I.T. Dr. Lerner has been associate professor of sociology at the Institute.

Working with M.I.T.'s Center for International Studies, Dr. Lerner will apply research findings on international communication to a new teaching program in the Department of Economics and Social Science. This co-ordinated program in the field of international communication was also made possible by the \$560,000 grant, which provides long-term support for two new professorships in the behavioral sciences.

Professor Lerner has been a senior member of the Institute Faculty and research staff since 1953. He was formerly professor of sociology at Columbia and Stanford Universities, executive secretary and research director of the International Studies Project at the Hoover Institute, and research director and founder of the Institut d'Etudes Européennes in Paris. He received his A.B., M.A., and Ph.D. from New York University.

Dr. Lerner's books include *Propaganda in War and Crisis*, *The Policy Sciences* (with Harold Lasswell), and *France Defeats EDC* (with Raymond Aron). *Modernizing the Middle East*, a study of communication patterns and social change in the Middle East, will be published next spring, and Dr. Lerner is now completing a study of French attitudes toward the movement for European unification.

Individuals Noteworthy

■ Year-end news included the 31 promotions, elections, or appointments which follow:

J. Howard Pew, '03, as a Director, Sun Oil Company . . . Starr W. Stanyan, '14, as a Director, Hoague-Sprague Corporation, Lynn, Mass. . . . Alfred V. Coleman, '15, as President, New England Power Service Company . . .

Marshall B. Dalton, '15, and Gilbert M. Roddy, '31, respectively, as Chairman and President, Boston Manufacturers Mutual and Mutual Boiler and Machinery Insurance Companies . . . Max I. Woythaler, '15, as President, Lombard Governor Corporation . . . Stanley M. Lane, '17, as President, New England Baptist Hospital . . .

Robert L. Sumwalt, '20, as Acting President, University of South Carolina . . . Clinton B. F. Brill, '22, as Chairman, New York State Thruway Authority . . . Robert L. Hershey, '23, as a Director, Vice-president, and member of the Executive Committee, E. I. du Pont de Nemours and Company . . .

William L. Stewart, Jr., '23, and Robert T. Collier, '18, respectively, as Chairman and President, Collier Carbon and Chemical Corporation . . . Ralph F. Gow, '25, as a Trustee, Norwich University . . . Howard R. Batchelder, '28, as Chairman, Div. of Gas and Fuel Chemistry, American Chemical Society . . .

M. David Haynes, '28, as Superintendent, Delaware Refinery, Tidewater Oil Company . . . Samuel J. Levine, '29, as Manager, Aircraft Nuclear Propulsion Department, General Electric Company, Idaho Falls, Idaho . . . Alfred Ziegler, '31, as Manager, Palmer Plant, Colorado Fuel and Iron Company . . .

John Lawrence, '32, as Executive Vice-president, Dresser Industries, Inc. . . . James R. Merrill, '33, as Manager, Santa Barbara Laboratory, Raytheon Manufacturing Company . . . Edwin R. Gilliland, '33, as a Director, American Institute of Chemical Engineers . . . Edmund Q. Sylvester, 2d, '34, as a Director, Shipbuilders Council of America . . .

Stephen M. MacNeille, '37, as Director of Research, American Optical Company . . . Captain Floyd B. Schultz, U.S.N., '37, as Commanding Officer, San Francisco Naval Shipyard . . . Elliott M. Gordon, '39, as President, Towle Manufacturing Company . . . Charles J. Jeffus, '39, as Business Manager, Nuclear Division, The Martin Company . . .

Russell L. Haden, Jr., '40, as General Manager, Chemicals Division, Virginia-Carolina Chemical Corporation . . . Walter M. Palmer, '40, as Production Superintendent, Johns-Manville Products Corporation . . . James D. McNitt, '41, as Vice-president and General Manager, Bristol Laboratories . . . Captain Francis B. Merkle, U.S.N., '41, as Commanding Officer and Director, Naval Boiler and Turbine Laboratory, Philadelphia . . . Ralph G. Mork, '42, as Director of Experimental Development, International Business Machines World Trade Corporation . . . Thornton E. Smith, '45, as President, Kulm, Smith, and Harris, New York.

■ Special honors recently announced or awarded to Alumni include:

To Walter L. Whitehead, '13, an honorary doctorate of science, by St. Francis Xavier University,

On the Horizon

March 1, 1958 — 12th M.I.T. Alumni Regional Conference, Washington, D.C. (For further information, consult T. K. Meloy, '17, 3000 Arlington Boulevard, Falls Church, Va.)

March 13-15, 1958 — 10th Annual Fiesta, M.I.T. Club of Mexico, Mexico City, D.F. (For reservations, consult Clarence M. Cornish, '24, Margaritas 139, Villa Obregon, Mexico 20, D. F., Mexico.)

June 16, 1958 — 24th Alumni Day, 1958, M.I.T. Campus in Cambridge.

Nova Scotia . . . to Stanley H. Osborn, '15, the C.-E. A. Winslow ['98] Award, by the Connecticut Public Health Association . . .

To Crawford H. Greenewalt, '22, the William Procter Prize for Scientific Achievement, presented at the annual meeting of the American Association for the Advancement of Science . . . to Edward N. Dingley, Jr., '26, the honorary grade of Fellow, by the American Institute of Electrical Engineers . . .

To Charles S. Draper, '26, the Holley Medal for a "great and unique act of engineering genius," the discovery of a new principle for controlling guns fired from moving platforms at moving targets, by the American Society of Mechanical Engineers . . . to Charles W. Jerome, '34, the grade of Fellow, by the Illuminating Engineering Society . . .

To Louis H. Roddis, Jr., '44, an Outstanding Service Award, by the U.S. Atomic Energy Commission . . . to Paul Talalay, '44, the 1957 Theobald Smith Award in Medical Sciences, for "demonstrated research in the field of medical sciences, taking into consideration independence of thought and originality," by Eli Lilly and Company . . .

Included in the 75 leading radio engineers and scientists named for 1958 as Fellows of the Institute of Radio Engineers were the following 14 Alumni: John B. Russell, Jr., '28; Jacob Millman, '32; Harner Selvidge, '32; Albert C. Hall, '37; Arnold P. G. Peterson, '37; Pierre M. Honnell, '39; Rodolfo M. Soria, '39; Stewart E. Miller, '40; David E. Sunstein, '40; Nathaniel Rochester, '41; Wilbur B. Davenport, Jr., '43; Lotfi A. Zadeh, '46; Henry J. Riblet, '48; and David F. Winter, '48.

Matthew R. Copithorne: 1880-1957

■ Matthew R. Copithorne, Associate Professor of English, Emeritus, died at his Cambridge home on December 4, 1957. For 33 years he had served on the Faculty of the Department of English and History. He was 77 years old.

Widely known as a lecturer on prose and poetry, Professor Copithorne was a native of Cambridge and a graduate of Harvard University. He joined the Institute staff in 1918 as an instructor and was appointed assistant professor of English in 1928 and associate professor in 1938. After his retirement in 1946, he served for five years as lecturer in the Department of English and History.

Cambridge and Moscow

■ The 327th meeting of the Alumni Council, at which President Gilbert M. Roddy, '31, presided at the Faculty Club on November 25, was attended by 174 members and guests. A substantial amount of business was quickly disposed of in order that Council members could hear an address on "M.I.T. — A City within a City" by Philip A. Stoddard, '40, Vice-treasurer, and an illustrated talk, "A Metallurgist in Russia" by Nicholas J. Grant, '44, Professor of Metallurgy.

Mr. Stoddard described various aspects of the day-to-day operations of the Institute and some of the physical changes anticipated in the future. He described the Institute as it might appear to an imaginary new City Manager who had come to take over the assignment of managing M.I.T.'s Physical Plant. The size of population of this community — 115 acres and 11,000 people, respectively — gives no idea of the services which must be provided.

M.I.T. is a fast-growing place. In the past 10 years, over \$20,000,000 value of new plant construction has taken place and the plant has increased in area by one-third. In the past 15 years, M.I.T. has added a building area (new or acquired) equivalent to the John Hancock Building, so that the Institute finds itself with almost 82 acres of building area.

The plant budget for normal operations and repairs for last year amounted to nearly \$2,500,000, requiring a payroll of 325 men and women who comprise the plant department, including matrons, janitors, mailmen, painters, electricians, and so on. In addition to the vigorous educational program involving classrooms, laboratories, and a myriad of research activities, there are also many public service activities conducted on the lot during the evening. There are about 20 class sessions per week conducted by Lowell Institute. There are over 100 evening class sessions per week involving 5,000 to 6,000 students under the University Extension Classes of the Commonwealth.

In addition, there are meetings of many professional societies and of several military reserve organizations and other public interest groups.

The Lowell Institute, the University Extension Classes, and these other public interest groups account for an average of about 30 meetings an evening in the main educational plant.

The night cleaning force of nearly 100 persons has to do the bulk of its work from 11:00 P.M. to 7:00 A.M. because of the difficulty of finding any earlier free time for much of the Institute's 80 acres of buildings. Cleaning supplies and equipment amount to \$40,000 a year and include four to five carloads of paper towels and 2,500 gallons of cleaning soap.

The M.I.T. telephone system is larger than that of the average community in the Commonwealth. It is the largest private telephone system in New England.

The activity in Kresge Auditorium has far exceeded anyone's expectations before it was built. Last year 1,225 events took place in the Main Auditorium, Little Theater, and Rehearsal Rooms. In the M.I.T. Chapel another 1,180 events took place.

The total mail handled at the Institute probably exceeds the equivalent of a city of 25,000 — cities perhaps the size of Belmont, Melrose, or Gloucester.

In closing, Mr. Stoddard mentioned some of the plans that are being discussed which will affect M.I.T.'s future campus: married student housing; student union building; graduate center; new undergraduate dormitories; materials research laboratory, and so on.

In a talk illustrated with Kodachrome slides and motion pictures, Professor Grant spoke of the trip which he and John Chipman, Head of the Department of Metallurgy, made last summer. They spent nearly a month in Russia as guests of the Russian Academy of Science, as participants in the Moscow Conference on the Physical Chemistry of Steelmaking. They took the opportunity to visit three Russian technical universities, three research institutions, and four steel plants, including three in Siberia. Throughout the trip they had complete freedom to take photographs and movies.

Dr. Grant emphasized the prestige of the scientist and engineer in Russia and the many other incentives that attract into these fields the finest talent throughout the country. He was tremendously impressed by the teaching, research, and the practical work programs that prepare their engineering graduates to step directly into valuable roles in industry. (Last year Russia graduated eight times as many metallurgists as did the United States.)

The large steel mills he visited were modern with good equipment. Certain of their production processes were on a par with those of this country, some behind, and in some cases their applications were 10 years ahead of American mills. There was, on all sides, proof that where the Russians want to put their effort and resources they do; they do it well and with remarkable effectiveness.

Earlier in the evening Horatio L. Bond, '23, chairman of the Audit and Budget Committee, presented his committee's report for the accounts of the Alumni Association for the fiscal year which ended June 30, 1957.

As Secretary for the Association, Donald P. Severance, '38, reported on the November 18 Silver Stein Dinner of the M.I.T. Club of New York, announced that 15 visits had been made to local M.I.T. clubs by 12 members of the Institute and Association staffs, announced changes in class affiliation for three Alumni, and reported new additions to the Council membership.

As Director of the Alumni Fund, Henry B. Kane, '24, reported that, as of November 22, a total of \$123,000 had been contributed to the Fund by 4,683 Alumni. Regional solicitations will be made in 140 areas, as compared with 73 regions last year.

The Midwinter Meeting of the Association is to be held on February 4, and Vincent T. Estabrook, '36, chairman of the committee, reported that this year's program will be devoted to the work of the Physical Science Study Committee. The program will necessitate several changes in the form of the meeting. Dinner will be at Walker Memorial, as usual, but will start at 5:30 P.M.; the program itself will begin at 7:30 P.M. in Kresge Auditorium. Various experiments will be set up in the lobby of Kresge to be viewed between completion of dinner and the starting of the Kresge program.

Twenty-five Years Ago This Month . . .

■ With 416 present, on February 4, 1933, at the Hotel Statler there took place the 58th Annual Alumni Dinner, at \$2.50 per plate! "It was," said The Review's account, "a carefully planned dinner and the program was happily conceived. As the 39th President of the Alumni Association, Dr. Allan Winter Rowe, '01, presided. His great gifts as a speaker were amply exemplified by the grace, dignity, and deftness with which he conducted the program."

As speakers Dr. Rowe presented Dr. Walter B. Cannon, Professor of Physiology at the Harvard Medical School; Sir Willmott H. Lewis, Washington correspondent of the London *Times*; and President K. T. Compton of the Institute. Dr. Compton's remarks were in part as follows:

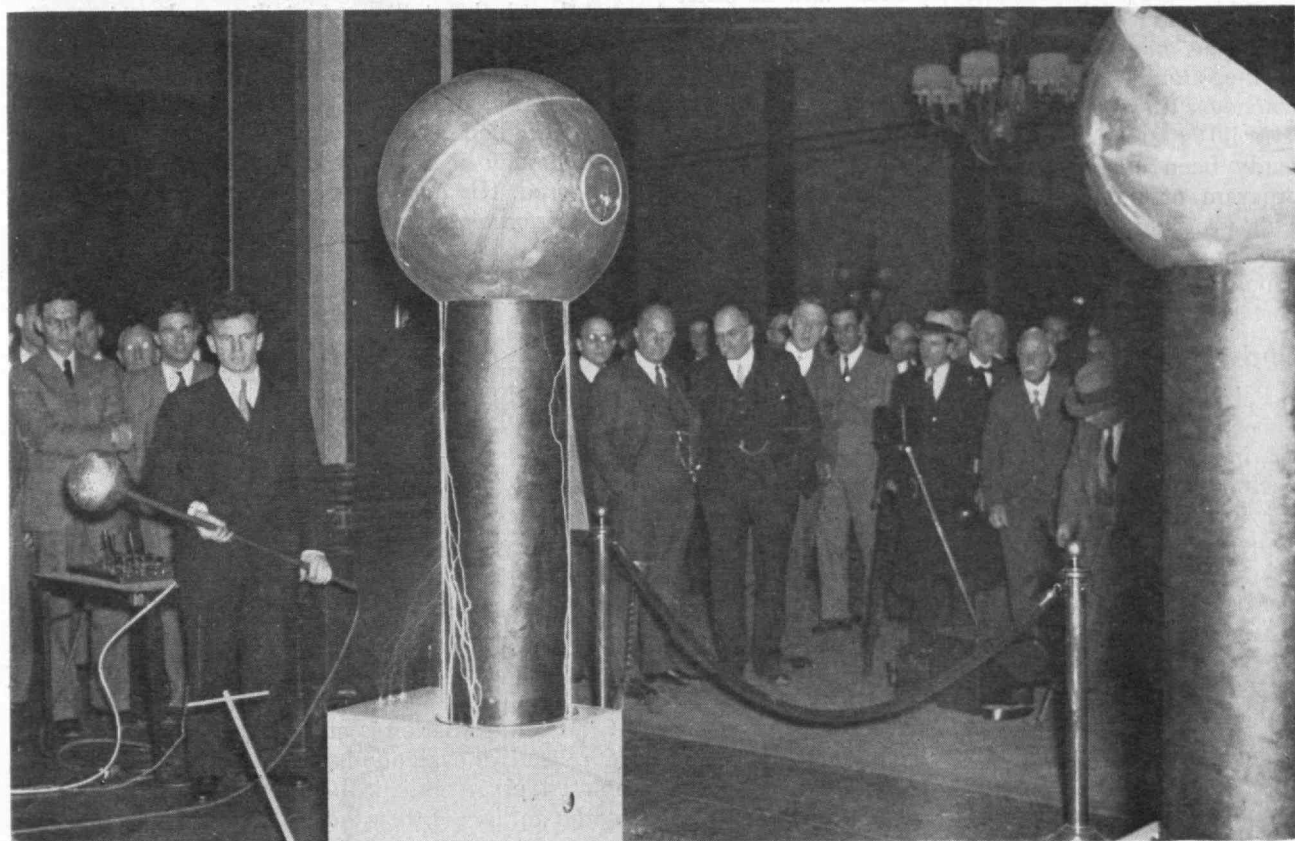
"In these times of social uncertainty and economic difficulty our Institute has an unprecedentedly strategic opportunity for service of a most fundamental value to society. Its object is to impart that knowledge, train that judgment, and develop that social outlook which combine to produce constructive accomplishment, wise leadership, and effective co-operation in this 'scientific age.'"

"Since this is a scientific age it is reasonable to suppose that men who have a real working knowledge of science and its applications should be peculiarly well fitted to deal with its problems. This should be especially true where the logic of science is joined with the practical accomplishment of engineering and the creative imagination of architecture, all with

due reference to principles of economics. This combination is found in our curriculum, which may be thought of as our platform for world service. Granted this platform, and its proven effectiveness, what can we do still more effectively to produce men who will accomplish, lead, and cooperate?"

"Consider first our curriculum. All with one accord are ready to admit that it is a stiff one. That is all right. It is also true that its set requirements leave but little time free for study or thought on the initiative of the student himself. That is not so satisfactory. In the third and fourth years the student may have to take as many as 11 subjects simultaneously. That is certainly undesirable, for it leaves little time for digestion and orientation. It emphasizes the contrast between college, where his work and thought are planned in meticulous detail by the curriculum, and after life where he must plan and steer his own course.

"On accepted pedagogical principles, it would seem wiser to allow the student progressively more responsibility and initiative as he advances toward graduation, so that he may pass easily from college to professional life, having acquired ability to exercise judgment in control of his actions, and habits of independent study, as well as the habits of industry and the knowledge and skill which are developed by our present curriculum. I am pleased to report that a special committee of the Faculty, appointed to investigate possibilities of improving our upper class curriculum, is now working on a plan of revision of the curriculum. . . ."



The 1,000,000-volt model of the recently developed Van de Graaff generator being demonstrated at the 58th Annual Dinner of the Alumni Association, held at the Hotel Statler, on February 4, 1933.

Boston Herald

Grant for Study of India

■ The Center for International Studies at the Institute has received a grant of \$750,000 from the Ford Foundation for a program of applied research on social and economic development in India, it was announced at the end of 1957. According to Max F. Millikan, Director of the M.I.T. Center, "the program will concentrate on critical problems related to the economic growth of India. It will attempt to collect the data and make the analyses on which effective development planning must be based."

The proposal for the research was made jointly by the M.I.T. Center and four of India's leading research institutions which will co-operate in the program. The Indian institutions are: the Delhi School of Economics, the Indian Statistical Institute, the Gokhale Institute of Politics and Economics, and the National Council of Applied Economic Research.

Examples of some of the kinds of research the joint India-M.I.T. program will undertake, according to Dr. Millikan, might include analyses of the regional pattern of investment and income change in India, the economic interchange among India's widely different sections, the right kinds of choices of technology for investment in particular sections, and the relations between the growth of big business and small business.

To carry out the new project the M.I.T. Center will maintain in India a rotating team of three or four United States and other experts to work with the Indian institutions over a four-year period. The Center will also bring to M.I.T. a number of Indian scholars to work in Cambridge with experts studying development problems both in India and in other underdeveloped countries. "While the India study will focus on economic problems," said Dr. Millikan, "non-economic problems will also be considered whenever they are relevant to economic ones."

M.I.T.'s Center for International Studies has already been engaged for the past four years on a program of research on Indian economic growth. This program has been part of a broad study of development problems in various parts of the world which has been carried out by the Center with support from the Ford Foundation.

Bind up the Wounds

■ Pain is as much psychological as physiological. This fact has been demonstrated by a discussion appearing on the pages of this periodical ("Ouch!" Technology Review, April, 1954, pages 292-293) reviewing evidence to show that, in many instances, human beings gain dramatic relief from excruciating pain upon being given, by mouth or by injection, an inert substance they are told is an opiate. Hence it is especially difficult for pharmacologists to evaluate accurately the pain-relieving value of new drugs developed for this purpose.

Further proof of the extraordinarily subjective nature of pain comes from recently published studies that compared pain suffered by soldiers from war wounds with pain suffered by civilians as a result of surgical wounds. These studies were made because it has long been a matter of general observation by military surgeons that wounded soldiers may remain

calm and placid, not go into shock, and decline narcotics, while suffering from degrees of injury that in a civilian situation would usually prostrate and confuse the victim, and make him clamor for medical relief for his pain.

Three hundred injured men, half soldiers and half civilians, were observed in the course of this study. Efforts were made to have the two groups comparable in essential respects, and to make sure that differences such as age and history of previous illness did not affect the results. The soldiers were questioned (mostly on the Anzio Beachhead) soon after they suffered severe war wounds; the civilians soon after they had undergone extensive surgery. In one third of each group, the injury had been to the bones, in a third to organs of the chest, and in the remaining third to organs of the abdomen.

The subjects, who were all alert and rational, were asked whether they were in pain. If they answered "yes," they were asked if the pain was slight, moderate, or severe, and if they would like something to relieve it. Such medication was desired by 83 per cent of the civilians, but by only 32 per cent of the soldiers! This difference appears even more striking when it is remembered that the civilians had been pampered with all of the resources of modern hospitals, whereas the soldiers had usually been jolted in ambulances over the rough terrain of a battle area, those with bone injuries usually imperfectly splinted. Also, the degree of injury from surgical procedures is usually much less severe than that from wounds inflicted by high explosive shell fragments.

Why this difference? Apparently it arises from the different *significance* of injury to the soldiers as compared with the civilians. A civilian undergoing major surgery, or injured in an accident, feels that disaster has descended upon him. He is being cut off, at least temporarily, from home and family; he must spend days of idleness and boredom in the hospital; his income may be suspended, perhaps permanently endangered. His outlook is one of tragedy; he experiences excruciating pain.

To the soldier, injury is a *reprieve* from disaster. On the battlefield, he has been under constant threat of death. Now, he is being removed from the line of fire; he knows he may never return to battle. His wound is a ticket to survival; therefore, it often gives him little pain even though grave in extent and nature. It should be noted that the Anzio soldiers did not exhibit a general dulling of the pain sensation. They were observed to protest vigorously if their dressings were roughly handled or if they were given an injection clumsily—this in men who did not complain of grievous bodily wounds.

These observations provide statistically validated support of previous conclusions that, in the human being, anxiety level is an important factor in the production of pain. Thus the psychological nature of the pain sensation is underlined, and the difficulty of objective evaluation of pain-relieving drugs is pointed up. A practical medical conclusion drawn by the authors of this study is their urging of doctors not to give powerful opiates routinely to injured patients, without first trying to find out whether the individual in hand needs such medication.

Big Stick Policy

■ Doubtless the first weapon used by primitive man was a limb torn from a tree; is it not extraordinary then that, in this day of sophisticated warfare, clubs are still commonly employed for defense and offense! These are the bludgeons that are standard equipment of civilian police, military police, and navy shore patrols. To be sure, clubs are not the only primitive combat technique police find it expedient to employ. In the army, cavalry became obsolete long ago, but policemen mounted on horses will apparently always be with us because of their unique capabilities in certain assignments, such as the handling of crowds.

Police clubs are of two types, the billet (pronounced "billy") and the night stick. The billet is a pocket weapon, for daytime use. It is about nine inches long and an inch and a quarter in diameter, and weighs a half pound. The billet is carried in a special deep, narrow pocket set low on the leg of the policeman's trousers. Traditionally billets were ornately turned from beautifully grained, highly polished cocobolo or lignum vitae wood, but in today's mass production era they are often molded from rubber, weighted with lead. The rubber billets are not only much cheaper but also have the advantage of doing less permanent damage when applied to the cranium of recalcitrant wrongdoers.

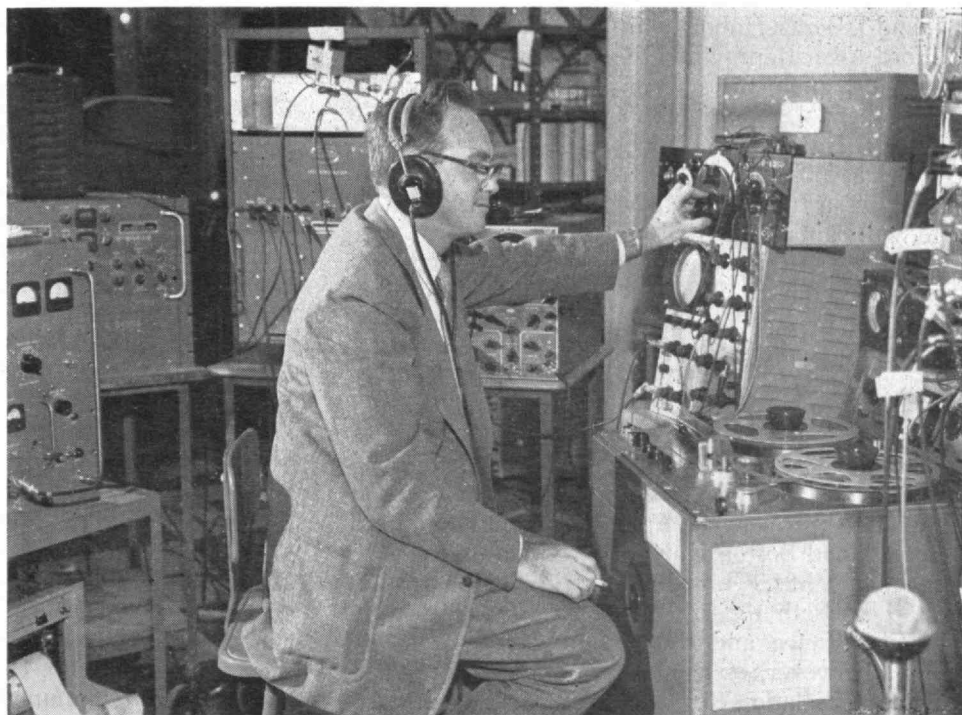
When the policeman goes on night duty, he leaves his billet at the station house, placing a flashlight in its stead in the special trouser pocket, and grasping his trusty night stick firmly in hand. Night sticks, like billets, have in recent decades left romance behind and become purely utilitarian. They were once made, with much decorative turning, from close-grained locust wood, but are now usually strictly functional, plain cylinders of hickory, with corrugated grip and drilled hole for a thong at one end; they measure about two feet long and one and a quarter inches in diameter, and weigh the same as the compact billet.

The leather thong with which night sticks are equipped makes possible the picturesque display of night-stick twirling. Although infinite in its variations, twirling consists basically in grasping the stick by the wrong end, then dropping it while the thong is held firmly. Properly executed, this maneuver causes the stick to spin, then return to the hand which seizes it, much in the manner of a Yo-yo top. Twirling is not included in the curriculum of police academies, but is passed from one generation of cops to the next by emulation. It is a necessary skill for every police officer, as it helps him cope with the main hazard of his calling, boredom.

Although billets and night sticks weigh about the same, the greater length of the night stick makes it a more effective weapon. That is why it is employed during the hours of darkness, when the crime rate rises. The leverage provided by the night stick makes its blows more telling, and the length of the stick enables the policeman to keep his adversary at a distance. The night stick is a versatile weapon, by no means limited to the clouting of a malefactor over the head. Police cadets learn how to disarm an opponent with a blow to the forearm, and also master subtle variations of stick work such as a rap on the shin or a straight jab of the end of the club into the adversary's solar plexus.

But much of the effectiveness of the night stick is psychological rather than physical. Just as scepter and ceremonial mace are symbols of authority, the policeman's truncheon is a poignant reminder to any potential wrongdoer that all transgressions may summarily result in a painful impact of hickory upon flesh. Hence a pacifying measure found to be most potent in times of civil stress and tension, such as strikes and mass demonstrations, is simply to send policemen forth on daytime duty armed with night sticks. Law-enforcement agencies, contending with crime waves, can afford to speak softly when backed by the big-stick policy.

New and powerful radar equipment recently perfected at the Institute's Lincoln Laboratory in Lexington, Mass., greatly extends the range of earlier warning and detecting systems. The new radar installation at Millstone Hill, Westford, Mass., has been used to receive signals from earth satellites. Shown here is William C. McLaughlin, '51, staff member of the Lincoln Laboratory, measuring and recording signals from Sputnik I on both 20 and 40 megacycles per second, simultaneously.



M.I.T. Photo

Athletic Résumé

■ The Institute, as is true of most first-rate schools of technology, has an active academic program with laboratory and other afternoon courses as part of normal operations. Athletics is regarded as a means for developing the student's physical fitness rather than for developing star performers. Fortunately, M.I.T. has no large stadium, nor has it a varsity football team. Within its intended sphere of activity, however, the students have a good time as they become accustomed to alternating physical exercises with mental effort.

Résumés of the last year's activities — with special emphasis on competitions during the spring term — have been prepared by: Robert M. Whitelaw, Varsity Baseball Coach; Frank S. DuBois, Jr., Crew Coach; John H. Burke, Varsity Golf Coach; Benjamin R. Martin, Jr., Varsity Lacrosse Coach; Charles Batterman, Freshman Lacrosse Coach; Edward A. Crocker, Varsity Tennis Coach; David Redhed, Freshman Tennis Coach; and Oscar Hedlund, Varsity Track Coach.

Their résumés of the season's athletic activities, prepared especially for *The Review* through the co-operation of Richard L. Balch, Director of Athletics, give an over-all picture of last year's freshman and varsity sports at M.I.T.

Baseball

The baseball team's won- and loss-record fell to an all-time low last spring when M.I.T. won one game and lost 17, but, in an optimistic prediction, the future looks brighter.

The southern baseball trip was highlighted by the 3-2 loss to Howard University and the opportunity to bounce foul balls onto President Eisenhower's front-lawn golf course. (The Howard baseball field was situated back to back to the White House.)

Seniors Charles F. Speer, Jr., '57, Martin M. Bressler, '57 (who pitched a one-hitter against Coast Guard for Tech's only victory), co-captains Alvin Richman, '57, and L. Peter Hohorst, '57 (recipient of the annual Clifford Award), provided the backbone of the team. Promising sophomores were: Warren H. Goodnow, '59, Richard J. Campbell, '59, D. Larry Jones, '59, Walter J. Humann, '59, Richard C. Lyons, '59, Jerry D. Welch, '59, and Albert L. Beard, '59. Robert W. Witte, '58, a transfer student from Middlebury College, will captain the 1958 team.

After the season's play, the constructive suggestion from an unidentified source came that Herb Score, Cleveland Indian's pitching ace, could be purchased for a million dollars. The baseball team's motto: "Wait 'till next year."

Crew

The varsity heavyweight crew had a strong beginning and looked promising during its first race on the Charles River on April 27 against Harvard, Syracuse, and Boston University. On June 11 and 15, respectively, M.I.T. raced Dartmouth at Hanover and beat them both times. The first race was over the Henley distance and the second over a four-mile course. However, on June 22 at the Intercollegiate Rowing Association Regatta, unknown difficulties set

in, although the shell was rowed gallantly, and M.I.T. was beaten by Dartmouth, finishing eighth in the race.

The freshman crew of the 1956-1957 season perhaps best illustrates the thought that slow starters can sometimes turn out better in the end. The squad worked hard and willingly throughout the year and showed a fine improvement with each contest. They completed their season on June 22 at the I.R.A. Regatta (Syracuse, N.Y.) where in a field of 11 crews they placed second to the Naval Academy Plebe Crew by 3.2 seconds or three-quarters of a length.

The season commenced in September, 1956, with approximately 125 inexperienced candidates (light and heavy). Through the ensuing eight months of the school year, they logged approximately 1,000 miles on the water, 800 of these in the period between February 22 and June 22.

In their earlier races of the spring term, the squad showed much room for improvement, but always maintained their fine spirit of co-operation and zest to do better. As the season progressed, they began to show more and more that they were a team to be reckoned with. At the Eastern Association of Rowing Colleges Sprint Championships (Princeton, N.J.) May 18, they rowed second by a length behind top-seeded Yale in their preliminary heat and finished second to Syracuse in the Consolation Final later that day. This was equivalent to placing sixth (out of 11) in that regatta.

Their finest improvement came after the end of classes (May 30-June 22) when they spent three weeks of double practice in Cambridge, Hanover, N.H., and Syracuse, N.Y., respectively. Their fine accomplishment in placing second at Syracuse was short of their ultimate goal, but was truly deserved in full light of their own fine spirit and teamwork over the many miles preceding that race, which was held in New York state.

Golf

The Tech golf team had a more successful season than is shown by their record of two wins and seven games lost. They lost to Wesleyan 3-4, Brown 3-4, Tufts 3-4, Harvard 2-5, Boston College 3-4, Holy Cross 2-5, and New Hampshire 2-5. They won over Babson 4-3 and Bowdoin 5½-1½.

In the New Englands, M.I.T. tied for eighth in the team totals. Robert L. Rosenfeld, '59, was the only team member and only Greater Boston collegian to qualify and he lost in the first round, one up. Bob was elected captain for the 1958 season. Not only is he a fine golfer but an excellent student as well. He played in the third position most of the season but in the last match with New Hampshire played number one position and fired a 74 medal while winning 5 and 4.

Matthew T. Mulkern, '57, played the first position most of the season and, in meeting the best of the opposition, more than held his own. Matt missed by one stroke of qualifying in the New Englands. Matt, who is the only local boy, comes from Watertown. T. Jerry Carter, Jr., '57, held down the number two slot and had a 3-5 record individually (he did not play against Babson). He is a transfer from Amherst

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A KEY TO AMERICA'S LEADERSHIP

Through some manner of alchemy, at all levels of society, we must cultivate a taste for learning, for scholarship, and for all that is excellent both in mind and in spirit

by J. A. STRATTON

THE great overriding question that presses today upon every thoughtful American is our capacity for technological supremacy. For a generation past no one has, for a moment, doubted but that this supremacy was ours without challenge. Suddenly events have transpired that seem to have shaken our confidence. The Russians have scored a superb technological and psychological advantage. In response, the floodgates of our press have opened to pour out a spate of words — words of explanation, of excuse, too often of recrimination. Perhaps a paragraph in Roger Burlingame's recent book *The American Conscience** sums it up as well as any. Speaking of Americans today, he says:

"We are prosperous. We are complacent . . . Skill is anonymous . . . Security has replaced adventure as a dominant aim. Intellect is in the discard."

But I, for my part, must be numbered among those who are reluctant to believe that we have already lost the race for technological leadership or that it is impossible for us to attain it in the future. We retain enormous advantages — advantages in productivity, in capital assets, and in scientific resources which we need only exploit.

But time is of the essence. These foreign objects sailing over our heads have galvanized the attention of the American people at last to the great and immediate tasks ahead. We must put an end to the finger-pointing and recrimination and go to work; for the fact is that we have all been at fault and there is no quick cure for our trouble.

Perhaps our greatest risk at the moment is to believe that we may purge ourselves by words or that we shall fall back upon temporary expedients. A small change in our budget, the reports of a few congressional investigating committees, a few key appointments, however important, will not suffice to re-establish our position. Let me say by example that, to my mind, one of the truly constructive steps accomplished lately has been the appointment of Dr. Killian as Special Assistant for Science and Technology to the President of the United States. No one can know better than I, who have worked with him so intimately over the years, how superbly qualified he is for the formidable task before him. And yet I am appalled by the willingness of many to believe that one

man alone, be he adviser or czar, can remedy the scientific ills of this country.

Let us take stock of our position. To most people the idea that Russia could overtake the West seemed fantastic. How could a country, starting only a short time ago with such severe handicaps, be in a position to challenge us with our own methods and our own weapons? How could her scientists, working under the shadow of a ruthlessly enforced ideology, be a match for those of a democracy?

If we are to understand Russia's advance, we must accept certain basic facts. First, we must recognize that the successful launchings of the satellites were more than brilliant, isolated triumphs of Soviet science engineered by "crash programs." They were the logical and predictable products of a great and sustained effort in education and scientific research that reaches to the very roots of Russian culture. From the start, the cultivation of science and technical advancement have been at the heart of the Communist program.

This policy goes back to the days of Lenin. Stalin was willing to pay any price for industrial and technological achievement. The cost was enormous but he got results. It was only in the latter part of his regime that political ideology began to interfere with the development of science. And the key fields of physics, astrodynamics, chemistry, and higher mathematics have been singularly free from political influence.

Fortunately we seem to be well past the point of seeking comfort in the belief that Russian education is so doctrinaire as to be worthless or even second-rate. We are challenged by a powerful movement — an educational movement widely supported by an entire people and surging forward with gathering momentum. Whether or not we are momentarily ahead or behind, in one field or another, is now of very little consequence. Our concern must be focused on the ominous change in the Russian potential.

To recognize that the Russian people are possessed by certain dreams and moved by national aspirations implies no sympathy for their method or system. But we must coldly evaluate the strength and resources of our competitor. It is difficult to foresee whether they will rely ultimately on military force or whether they will endeavor to overwhelm us with a techno-

*New York: Alfred A. Knopf, 1957.



M.I.T. Photo

A group of M.I.T. students attend class in the Great Court. Of late, the most gifted of our faculties are in danger of losing touch with undergraduate education in the colleges, and have signally failed to support the dignity and importance of the high school teacher.

logical supremacy. One thing, however, is absolutely clear: they are convinced that the key to all future power, of whatever kind, lies in science. Unless we are prepared to cope with that challenge, it is futile to wish for our continued technological leadership.

There is now a point that I should like to stress to you — an idea that seems to me even *more* important. Our preoccupation with science these past few weeks has been centered quite understandably on the immediate threat to our external security. And yet, if by some magic this threat of war should disappear — indeed if there were no Russians at all — the lesson of the satellite is clear. The world has crossed a certain critical threshold in the realm of science, and like a nuclear chain reaction the advance of science is now feeding upon itself and moving forward at an ever-accelerating pace. Each new discovery in pure science brings with it its multitude of applications for new products, new services, and new industries. These are changing not only the economic structure of the globe, but the entire character of our civilization.

For a long time past, in technological matters, we Americans have been the most knowing and sophisticated people of the world, and yet it seems to me we are now failing to comprehend the degree to which the forces of science and engineering are about to dominate the lives of succeeding generations. Wholly apart from the imminent danger to our physical security, our capacity to maintain our economic and cultural superiority in the face of rising competition rests upon the fruitfulness of our research and, even more importantly, our capacity to live in harmony will be measured by our skill in fusing both science and humanities into the common culture of our people.

I have the faith and confidence in the American plan of life to believe that we can meet the challenge, although at a cost and a sacrifice. In the present mood of self-criticism, the American system of education has been drawing the hottest fire. As President Eisenhower has stated, "We have failed to give high enough priority to science education and to the place of science in our national life."

To remedy this situation there are certain obvious and immediate steps to be taken. We all know quite well what these are: we must pay more to our teachers; we must find ways of encouraging boys and girls to study science, and of inducing men and women to teach them. And because the mass of students is about to increase enormously, we had better look hard at the teaching process itself to see if we cannot make it more effective and appealing. All this has been said over and over again, and these are measures that press upon us most urgently. But let us clearly recognize that these are emergency measures only. The small pay and the meager prestige of the high school teacher is only symptomatic of much deeper ills. There is little to gain by shifting the blame onto local school boards, for the ultimate responsibility lies within the family and within the community. The quality and character of the nation's schools only reflect the basic attitudes of American society toward education and learning. The support that we give to our local schools is the measure of our cultural aspirations.

The searching question now is whether the American public has been stirred deeply enough to leave a lasting impression. It must come to realize the transcendent importance of science in the modern world, and it must be freed from the conviction that science is wholly materialistic and vocational, that it undercuts the dignity and individuality of man, that it contributes only to the convenience and not the quality of our society.

The mistrust and even hostility so frequently encountered in the lay public as to the nature of science comes from our failure to make science an integral part of our common education. A recent poll of American high school students conducted by Professor H. H. Remmers of Purdue University found that 45 per cent of them thought that their school background was too poor to permit them to consider science as a career, 30 per cent believed one cannot raise a normal family and be a scientist, 25 per cent thought scientists were "odd," and 14 per cent thought they were evil.

It is such evidence that leads me to believe that a re-examination of the aims and purposes of a liberal education in a modern context is by far our most urgent need. There is indeed today a serious shortage of scientists and engineers. We must do what we can to swell their ranks, but great scientists, great engineers, and great educators will come most readily from a society in which educated men and women are as at home in the sciences as they are in the humanities.

In the simplest possible words, I do not believe that the principal function of our secondary schools is merely to produce more scientists or future engineers. On the contrary, it must be their aim to develop an educated public competent to deal with the human and technological problems which will grow ever more complex.

And there must be changes in attitude even more important than changes of substance and curriculum. We in America have been curiously plagued by the fear of an intellectual elite. We have tended to distrust intellectual achievements that are not to be had

by everyone on equal terms. There has been too little pride and understanding among Americans of the quality of excellence.

Through some manner of alchemy at all levels of society, there must be a cultivation of a taste for learning, for scholarship, and for all that is excellent in mind and spirit. We must take better account of the wide spectrum of human abilities, interest, and initiative, while at the same time maintaining the facilities and opportunities to every American child for education.

Again, the schools must help, but the basic responsibility for this reorientation of attitude rests with the family and the community. Without this support, without our active participation as citizens and as parents, the schools can never hope to accomplish the task that now lies before them.

The schools, then — and I am speaking particularly now of our primary and secondary schools — must be supported from below. But they must also be supported from above. There are 40,000,000 Americans — nearly one out of every four people in the nation — going to school today. We rely upon these schools to mold American ideals and to develop American talent. And at the top of the system are the colleges and the universities. Increasingly we depend upon these institutions of higher learning for graduate work and research.

But let us not forget that the traditional function of the university is to teach and to provide teachers as well as to advance learning. It has seemed to me of late that the most gifted of our faculties are in danger of losing touch with undergraduate education in the colleges themselves, and have signally failed to support the dignity and importance of the high school teacher. In this time of crisis it is incumbent upon the university professor to prove himself the most powerful ally of the secondary school.

I think it important, too, that the faculties of our great professional schools should devote attention to the needs of the modern curriculum and modern methods of teaching comparable to their efforts in scientific research. Indeed research in teaching may be at the moment our greatest need.

It gives me great pride that the Institute has begun to recognize its obligation toward the teaching of science at every level in our schools. The Physical Science Study Committee, which has been hard at work at the Institute for more than a year has, as its specific aims: "(1) to plan a course of study in which major developments in physics, up to the present time, are presented in a logical and integrated whole; (2) to present physics as an intellectual and cultural pursuit which is part of present-day human activity and achievement; and (3) to assist physics teachers, by means of various teaching aids, to carry out the proposed program." This committee has enlisted the active support of teachers from all parts of the country in planning an improved high school physics curriculum. Already several films and a new high school physics textbook have been prepared, and more aids to teaching at the secondary school level are on the way. To my mind, the project is a wonderfully imaginative, brilliant effort on the part of a

(Concluded on page 214)



Charles E. Brown

"It took man about 25,000 years to decide to fly. Thereafter, it took man only 50 years to surpass the birds in their own realm." — Jacqueline Cochran.

How did man achieve flight? Was it a sudden inspiration, or a gradual development? Was there a single invention which made man air-borne? Actually man achieved flight by several alternate means — balloons, gliders, dirigibles, and propeller, jet, and rocket airplanes. Several of these vehicles could and did evolve independently.

The helicopter showed the earliest promise of developing into reality. Over 450 years ago, da Vinci designed an "aerial screw," a helicopter-like device powered by a spring motor. However, after such a precocious beginning, the helicopter's development was severely retarded. Da Vinci's idea was completely lost to the world for 300 years, and his complete works were not published until 1930.

Meanwhile, air progress continued along other lines. In 1783 the Montgolfiers launched the hot-air balloon, the first apparatus for high-altitude research.

Gliders were then developed by Lilienthal in Germany, Pilcher in England, and Chanute in America. Although none of these was a powered craft, valuable aerodynamic information was obtained which later contributed to the airplane.

The dirigible was developed to a high state in Germany. It saw long years of passenger and mail service before the flaming disaster of the *Hindenburg* in 1937 put an abrupt end to its history.

The most promising of all lines of development culminated in the Wright brothers' airplane. After their first successful flight in 1903, the propeller air-

plane developed quickly into the many versions we know today.

But what of the helicopter? Although a manned helicopter flight was made as early as 1907, further advance did not come until 1923 with the development of the autogiro by a Spanish engineer, Juan de la Cierva. The first practical helicopter was put into flight by Igor Sikorsky in 1939. And the helicopter did not see war duty until the Korean conflict (1951-1952), 35 years after the first mass war use of propeller airplanes. With a free flow of communication, the helicopter's history might have been very different.

Although all of the above-mentioned aircraft place man in the realm of the air, each achieves flight by a different means and has a different range of application. For an obvious example, the velocities available with various aircraft distinguish sharply between gliders, dirigibles, and helicopters on the one hand, and propeller, jet, and rocket airplanes on the other. But the high speed of jet and rocket airplanes is achieved at the expense of high-fuel consumption per mile (Table 1). And the slow helicopter achieves a maneuverability which is impossible for the faster aircraft. Modern technology can design an air-borne vehicle to satisfy almost any specification, or even several specifications, but not all desirable characteristics can be built into a single craft.

Flight in Nature

Eons before man ever thought of flight, nature wrestled with the problem and evolved at least three distinct answers for a variety of conditions and materials: birds, bats, and insects. (A fourth extinct reptilian group might also be included here.) Even within

Invention in Flight

Great possibilities lie ahead for the congregation of nations best able to reap the benefits of its men of talent

by J. L. B. BLIZARD

TABLE 1

1	2	3	4	5	6	7
<i>Type of Aircraft</i>	<i>Use</i>	<i>Speed Range (MPH)</i>	<i>Cruising Speed* (MPH)</i>	<i>Fuel Load for Col. 4</i>	<i>Advantages</i>	<i>Disadvantages</i>
Dirigible	Short and long range transport	0-100	50		Independent of weather conditions	Low speed, lack of maneuverability
Helicopter	Rescue, Evacuation short range transport	0-200	100	11,300 lb	Maneuverability, vertical take-off and landing	Low speed
Piston Engine	Long range moderate speed transports, bombers, fighters	0-350	300	5,650 lb	Low fuel consumption, reliability, long life	Operates at relatively low altitudes
Turbo-prop	Long range bombers and transports of high take-off weight	0-Sonic (600-900)	500		High power, low fuel consumption for heavy loads at take-off. Long range	Limited in speed only by current propeller efficiencies
Prop-jet	Longer range than Turbo-jet		440	10,300 lb	Moderately high speed and high performance at high altitude	Limited in range by fuel consumption
Turbo-jet	High-speed medium-range fighters, small bombers, possibly transports	0-Sonic	560	24,000 lb	High speed, relatively high altitude. Smooth performance	Low thrust, at low speeds and altitudes. Payload and range limited by fuel consumption
Pulse Jet	Missiles, perhaps some aircraft	0-1,500	325 (V-1)		Simple design, cheap to manufacture, expendable	Extremely high fuel consumption, vibration, noise
Ram Jet	Pilotless aircraft, guided missiles	800-2,600	750	11,500 lb exclusive of auxiliary power plant	Extremely simple design, capable of great speed	Requires auxiliary power plant to reach operating speed
Rocket	Missiles, high-speed interceptor aircraft. (Space flight)	0-3,500	1,000	990,000 lb [†]	Extremely high speed able to operate outside atmosphere	Very high fuel consumption

* For 1,000 mile range, 40 passengers

† Estimated

a distinct category, a wide variety developed to meet differing conditions (Table 2).

Birds, as well as airplanes, are designed for a great number of environmental conditions. The sea birds have long, narrow wings designed for hours of uninterrupted gliding. Hawks glide also, but their aerodynamic characteristics are tailored for dive-bombing. The highest recorded speed of any bird, 200 miles per hour, has been noted in a duck hawk's dive.

Hummingbirds, the avian helicopters, are capable of sustained hovering — forward, backward, and up-and-down motion. This maneuverability is bought at the price of a small size and high metabolism — sustained by the highest rate of wingbeat and heartbeat known among birds.¹ It is interesting that the energy consumption of hummingbirds (726 B.T.U./lb./hr.) and helicopters (750 B.T.U./lb./hr.) is remarkably similar.¹

Early creatures underwent severe modifications in order to fly. The entire anatomy and physiology of the bird is subordinated to the requirements of flight. Weight has been cut down in the feet, legs, and head,

¹Please see numbered references at end of article page 218.

and powerful wing muscles have been developed. In some birds, the reproductive system during most of the year shrivels to 1/1,500 of its weight during breeding season.² The power/weight ratio of birds has been increased by special adaptations, including hollow bones, feathers, and a high metabolism maintained by pulse rates up to 600 per minute and body temperatures up to 113 degrees F. The frigate bird has a wing span of seven feet, but its skeleton weighs only four ounces. This is less than the weight of its feathers.² The diet of birds consists only of high-calorie foods (high-octane fuel), and birds utilize a greater proportion of the food they eat than do mammals. A young stork gains a third of a pound of weight for each pound of food — a 33 per cent utilization of food compared with about 10 per cent in young mammals.²

Flight by Man

Just as birds required special adaptations to become air-borne, man needed certain modifications for flight. In order to fly, man had to achieve a higher

TABLE 2
CHARACTERISTICS OF BIRDS

	<i>Low</i>	<i>Typical</i>	<i>Maximum</i>
Range	20 miles Grouse	200 miles Robin	3,000 miles nonstop Golden Plover
Cruising Speed	5 mi/hr Woodcock	35 mi/hr Robin	180 mi/hr Swift
Power	112 ft-lb/min (full flight) Pigeon	500 ft-lb/min (take-off) Pigeon	1,085 ft-lb/min (hovering) Pigeon
Wingspan	4.5 inches Hummingbird	8 inches Robin	11.3 feet Albatross
Wing Area per gm wt	0.5 cm ² /gm Loon	4.2 cm ² /gm Hummingbird	9.5 cm ² /gm Leach's Petrel
Weight	0.1 ounce Hummingbird	3 ounces Robin	25 pounds Pelican
Take-off Character- istics	Must plunge from cliff; Puffin, Gannet	Requires runway and headwind; Condor	Vertical take-off Quail
Aspect Ratio ($\frac{\text{wing length}}{\text{wing width}}$)	3/2 Grouse	3/1 Crow	11/1 Albatross
Gliding Angle	9 ft/1 ft Pigeon	16 ft/1 ft Eagle	24 ft/1 ft Gull
Wing Beats/sec	8/sec Pigeon	12/sec Swift	55/sec-hover- ing 75/sec-flying 200/sec-diving Hummingbird
Body Temperature	105 degrees F. Pigeon	107 degrees F. Sparrow	113 degrees F. Thrush
Heart Beats/min	135/min Pigeon	514/min Canary	615/min Hummingbird
Blood Pressure	99 mm. Hg Robin	145 mm Hg Pigeon	180 mm Hg Chicken
Metabolic Turnover	105 min Bluejay	45 min Thrush	27 min Cedar Wax- wing

"metabolism" and a lightweight streamlined structure. He accomplished this, of course, not by re-designing himself, but by building himself a cocoon with the proper characteristics.

Although the craving had existed for hundreds of years, flight was not possible for man until the proper combination of materials was available. With the advent of light structural metals, the internal combustion engine, gasoline, and safe-testing methods, the development of aircraft could follow naturally.

Light Structural Metals. Most early airplanes were built of paper, cloth, and wood strips, similar to today's model airplanes. One flight test was often enough to finish such a craft, not to mention its pilot. Even as late as 1918 many airplanes had plywood covered wings.

Before aluminum was developed, the lightest strong metal in any abundance was iron, of density 7.9 grams/cubic centimeter. Not until 1886 was a method of separating aluminum developed (independently by Hall, U.S., and Héroult, France). Aluminum, with density of 2.7 grams/cubic centi-

meter, was already an important structural material for airplanes in World War I. By 1930, American aircraft companies were using 5,000,000 pounds per year. At the time of World War II, magnesium (density 1.7) was becoming available — production increased eightyfold in the five years after 1938.

Lightweight Power Plant. As late as the Nineteenth Century there were only four prime movers available for flight propulsion: steam piston engine, steam reaction engine, skyrocket propulsion, and spring mechanism (clockwork). (The internal combustion engine was not developed until 1887 by Daimler and others.) All of these methods of propulsion were tried at one time or another, without evident success. Da Vinci's helicopter was designed to be powered by a spring motor. The motor might have worked in a model, but would have been too weak for manned craft. About 1500 a Chinese Mandarin, Wan-Hu, made his first and last flight in a kite chair powered by 47 gunpowder rockets.³ A design for a rocket airplane, powered by gun cotton, is ascribed to Siemens in Germany in 1850.⁴ It was never built, fortunately for the safety of the persons concerned. Even today most rocket fuels are hazardous to the extreme. While in his cell awaiting execution for the Czar's assassination, Kibaltchitch in 1881 designed a flying platform powered by rocket propulsion.⁵ It bears a remarkable resemblance to the modern American "Flying Bedstead," which is jet propelled. The early design might have worked, but could not have kept the vehicle air-borne for more than a few minutes with the rocket fuels then available.

Steam reaction may have been the power plant used by the Greek philosopher Archytas (360 B.C.) who built a mechanical flying bird.³ A British patent was issued in 1841 to Golightly for a steam reaction airplane, which was never built.⁶ In 1842, a functioning model of a steam reaction helicopter was demonstrated by Phillips in Paris. Reports stated that the small helicopter "rose to considerable height and traveled a long distance horizontally until it touched the ground again."⁶ As with the spring motor, there was sufficient power for a model airplane but probably not enough for a manned airplane.

In the Nineteenth Century, the steam piston engine was probably the only existing engine with sufficient power for airplane propulsion, but it was far too heavy. A Glasgow engineer, Kaufmann, mounted a steam engine in a flying vehicle, but it never got off

TABLE 3
HEAT VALUE PER POUND OF VARIOUS FUELS

<i>Fuel</i>	<i>Average B.T.U./lb.</i>
Wood	5,500
Lignite	6,000
Coal	14,300
Gasoline	19,500
Acetylene	20,100
Methane	21,400
Diborane (B ₂ H ₆)	31,000
Diatomic Hydrogen	51,900

the ground.⁷ The American physicist Langley successfully flew a 12-foot model airplane equipped with a small steam engine in 1896.⁸ His later experiments with a manned airplane ended disastrously in 1903, just nine days before the Wright brothers' famed flight at Kitty Hawk. However, his airplane was successful in all respects but power plant. In 1914, Glenn H. Curtiss obtained permission to install a modern lightweight gas engine in Langley's airplane, and the contraption proved itself capable of sustained flight.⁹

High-Test Fuel. The two major fuels available before the Twentieth Century — wood and coal — were not noted for high efficiency per unit weight (Table 3). Gasoline occupies 50 per cent less space than coal and has 25 per cent less weight for equal heat value. Indeed, it has been suggested that the conventional propeller airplane became possible only upon the availability of petroleum fuels: "The enormous development of aeronautics in our lifetime is a consequence of the availability of gasoline. The Wright brothers' invention at any previous time could have amounted to no more than an improvement in gliders, perhaps of some interest to sportsmen . . . In January of 1900 the world's first great oil gusher was blown in near Beaumont, Texas, spouting an estimated 100,000 barrels a day before it could be brought under control . . . After Spindletop, oil became an industry and opened possibilities for the machine age that brought about rapid changes in Western society."¹⁰

Gasoline is indispensable to modern aircraft. However, the fact must be faced that gasoline may not always be available. Obviously substitute fuels will be found (or grown, as alcohol), but will the "alcohol" airplanes of the Twenty-first Century resemble our airplanes of today? A difference of fuel alone may change them completely. The change may come soon: Eugene Ayres, former Research Director of Gulf Oil Corporation, states: "We can now forecast reliably that production of oil will begin to decline in the United States in 10 to 15 years and in the rest of the world not very long afterward . . . In short, all the signs indicate we are within sight of the end of the fossil fuel era on our planet."¹¹

Safe Testing Methods. The annals of early flight are filled with accounts of fatal accidents. A static means of testing was needed — before piloted attempts were made. More aerodynamic data were needed.

Newton studied the air resistance around spheres by dropping bodies from a height. This method of testing was perfected by the French engineer Eiffel, who performed extensive experiments on his famous tower. Another technique was used by Cayley and Lilienthal — the whirling arm — similar to a merry-go-round. Much reliable low-speed data were obtained by this method, but the turbulence set up after a few revolutions was usually troublesome.

The ultimate instrument for aerodynamic investigations has been the wind tunnel. A simple form of wind tunnel was built as early as 1871 by Wenham for the Aeronautical Society of Great Britain. The extensive tests of the Wright brothers in their home-made wind tunnel may have been the decisive factor in their success.



Differentiation of Aircraft

Just as birds have adapted to a wide variety of environmental conditions by evolving 25,000 species (and flying insects 630,000 species), the aerial ships of today feature a wide variety of special characteristics. Man has designed aircraft for high speed, long range, maneuverability, low-fuel consumption, and so on, but has found it impossible to combine all desirable features in a single vehicle. Thus there is the ram-jet, capable of high speed at relatively high efficiency, but which will not operate until speeds of several hundred miles per hour have been reached! Similarly, high-speed airplanes can be designed to take off from short runways (for example, aircraft carriers) but only if one is willing to pay the high price in fuel of jet-assisted take-off units and thrust augmenters.

Man has broken altitude and speed records successively in the X-1 and X-2 rocket airplanes, but the fuel consumption is so fantastically high that the airplane must be carried aloft to 30,000 feet by a con-

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Soviet Education

FOR SCIENCE AND TECHNOLOGY

In greatly abbreviated form, but in the author's own words, *The Review* presents a summary of a comprehensive survey on Russian education in science and technology

by ALEXANDER G. KOROL

That Soviet technologists have been successful in launching an earth satellite — as they promised they would be — points to the high level of scientific progress and technological resources the Kremlin can draw upon to achieve any objective it thinks is sufficiently important. The Soviets have assumed world leadership in at least one field of science; they could do so in other fields as well, for the stakes are high and the winner plays "for keeps."

Concentration of national effort, coupled to first-class technical education, accounts for the present Soviet superiority in rockets. As we ponder our own vexing problems of national effort and educational progress, it is well to take a look at current education in Russia. Under present circumstances, it is imperative for us to examine and to understand the close coupling that exists between Soviet training in science and technology and objectives of the Kremlin.

*Fortunately, the Center for International Studies at M.I.T. has just completed a timely and significant contribution in this field in Alexander G. Korol's book, *Soviet Education for Science and Technology*, published jointly by The Technology Press of M.I.T. and John Wiley and Sons, Inc., New York. Mr. Korol's comprehensive study of current Russian technical education examines its structure, strengths, weaknesses, and — most important of all — its potentialities as it reflects the objectives and rationale of Soviet communism. Mr. Korol's findings are directly related to current problems of American education, and raise some important questions about the aims of our educational system.*

Mr. Korol's conclusions on Soviet technical education are of particular interest and significance to Review readers. For this reason a few of the more important observations and conclusions of his study are presented on these pages with the approval of the author and publisher. Admittedly, the few selected passages presented here, in the author's own words, cannot hope to present the entire pattern of a fabric woven together in a 500-page volume. It is hoped, however, that enough of the warp and woof is displayed to give a hint of the over-all design, and to show the close relationship between technical education in, and the clearly stated national objective of, the Soviet Union. — Ed.

SOVIENT civilian institutions of higher education include two general types: the universities, of which there were thirty-four in 1956, and the institutes — a general category embracing more than 700 schools.

Future Soviet physicists, chemists, and mathematicians receive their undergraduate training only at the universities; in the engineering schools (including the so-called polytechnic institutes) undergraduate physics, chemistry, and mathematics are given only as service courses. But even the universities of the Soviet Union are far more vocationally oriented than their counterparts outside the Soviet bloc. Beginning with 1955, for instance, all university graduates were to be certified as school teachers of their specialty (such as history, Russian language, or physics). The vocational bias of the Soviet university is also clearly reflected in the designations of majors ("specialties") offered at the undergraduate level. . . . Several of the university majors of undergraduate instruction are also offered in a number of specialized schools of higher education generically referred to as institutes.

With a few exceptions, the schools categorized as "institutes" can be identified directly by their names, e.g., Moscow Engineering-Physics Institute. Others, however, are named "academies" (e.g., Leningrad Forestry Engineering Academy), or "*uchilishche*" (e.g., Moscow Higher Technical Uchilishche, i.e., school). Music conservatories are also included in the general category of "institutes." At the undergraduate level the institutes train for all types of employment; correspondingly, they fall into a number of more or less distinct and internally homogeneous groups of institutes such as pedagogical, medical, and arts.

Central control of the education of specialists in the USSR is embodied in "academic plans" established by the Soviet Ministry of Higher Education for all the designated areas of specialization within the authorized fields of professional training. Thus a given academic plan (*uchebnyi plan*) presumably reflects the current judgment of the Ministry as to (1) the kind of training the specialist must have in order to satisfy the needs of the operating (industrial and other) ministries and (2) the most effective use of the available academic resources in the conduct of this training.

The basic structure of Soviet academic plans for professional training—training for a specific job—was first established in the early 1930's; and frequent and numerous changes, especially in curricular details, were made in subsequent years. The most recent and apparently far-reaching campaign calling for fundamental improvements in the entire academic process and involving a very considerable revision of both the university and engineering courses stems from the Party directives of 1954.

By far the most outstanding characteristic shared by all *uchebnyi* plans is the very large proportion of total time allotted to *scheduled*, i.e., compulsory, class attendance. Six scheduled hours per day, 36 hours per week (not counting the time given to military training) appear to be standard, at least for the freshman year, in all Soviet schools:

In recent years the curricula [*uchebnye plany*] have been so structured as to provide, according to the schedule, 36 hours of required attendance per week in all semesters. Formerly, the plan, which unfortunately remained in effect for only one year, called for a different number of hours . . . [diminishing each year down to 24 hours in the fifth year].

In comparison, the MIT freshman schedule, for instance, calls for about 24 hours of classroom and

laboratory attendance, including Military Science (3 hours per week).^{*} Thus a Soviet student has approximately 70 per cent more scheduled class hours in his freshman year than his American counterpart at MIT:

		Hours per Year	Index
MIT	(30 weeks) (24 hours) =	720	100
Soviet	(34 weeks) (36 hours) =	1,224	170

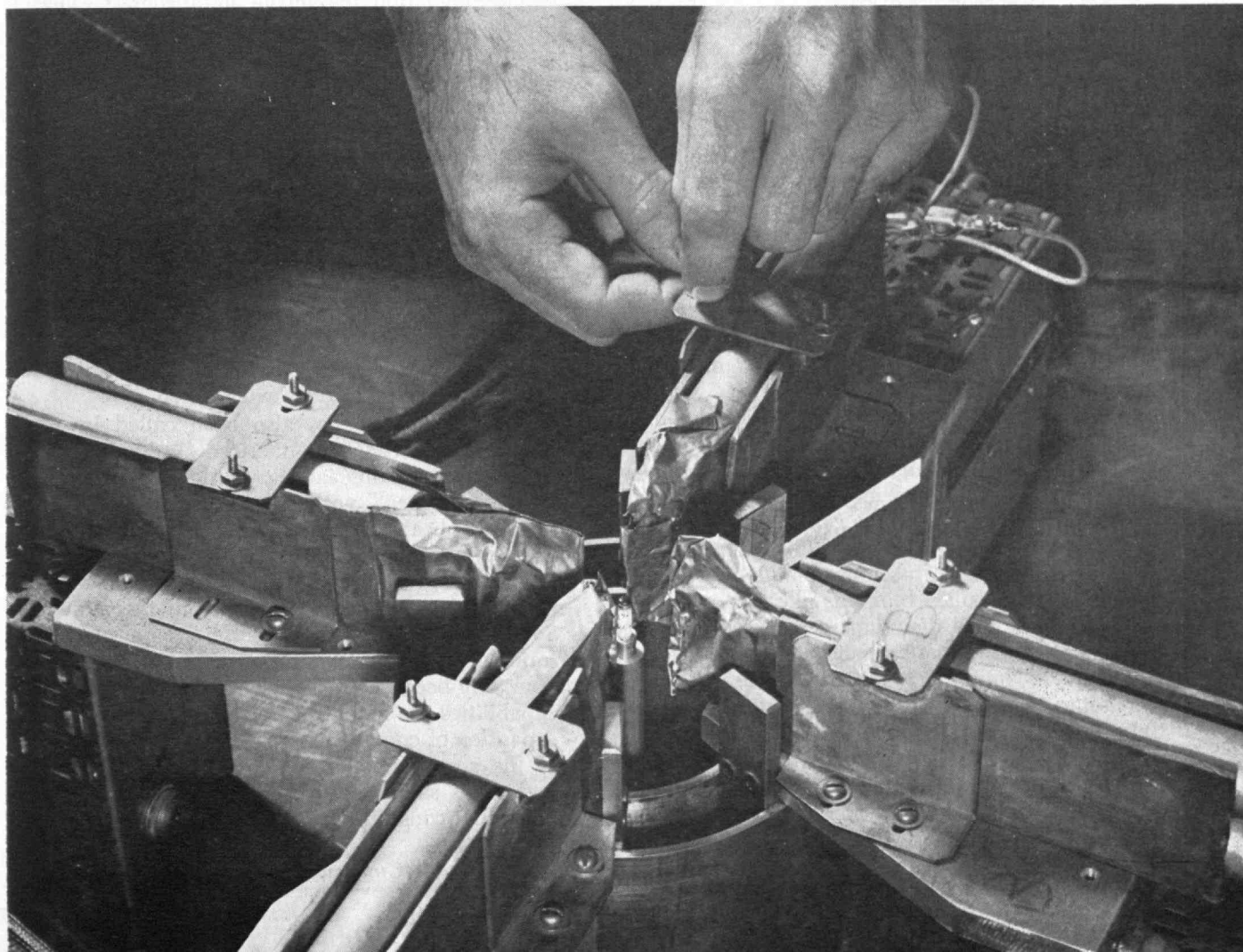
If one considers that, on the average, the number of class hours in American universities and colleges is about 20 hours per academic week, the score of the Soviet freshman on required attendance is just about double the American average. Furthermore, 36 scheduled hours per week has not been the maximum in Soviet curricula. The 1953 schedule for the seventh semester in all specialties at the Moscow Steel Institute was reported at 43 required hours per week.

The dominant feature of the communist state is the total control over political, economic, cultural, and social life exercised by a self-appointed and self-perpetuating Communist Party dictatorship. Its educational system, correspondingly, is an instrument

^{*}The normal student schedule at MIT is considered to be 50 hours per week, including class and laboratory attendance and preparation.

The largest single school system in the world is under the control of the Communist Party . . . it emphasizes science and technology more than any other educational system . . . and beyond a certain minimum of general education, it concentrates exclusively on specialized training at vocational, sub-professional, and professional levels.

M.I.T. Photo



designed solely to serve Communist Party interests; and the Communist Party dictatorship defines precisely what it wants of its educational system and what kinds of skills it needs at its command at any given time. It has a *proprietary* interest in training its subjects in whatever numbers and at whatever levels and categories of skill are needed for its designs and purposes. Thus two foundation facts of the Soviet educational system are the prescription of *national maximum* admissions quotas and the assurance that all designated vacancies are filled.

The organization and content of Soviet education reflect two dominant objectives: first, to inculcate a complete — and, if possible, devout and enthusiastic — commitment to the will and ways of the Communist Party; and second, to develop maximum technical competence for work in designated occupations and capacities.

The Soviet educational system must always be related to a basic problem of communist dictatorship: if the entire training program is controlled and organized for specific planned uses — as it is in the Soviet Union — can the distribution of trained manpower be left to chance?

As significant as its exercise of power to employ the already available resources of trained manpower in desired directions is the apparent success of the Soviet system in inducing, on the part of the student, self-motivation toward higher education. In terms of status, prestige, and economic advantage there are no desirable alternatives to professional education in the Soviet Union (aside from a purely Party career). Consequently, the aspirations and energies of Soviet youth are automatically directed toward educational goals.

It is plain, then, that central control over the educational system is an inevitable and logical consequence of the Soviet rationale of education. That control explains both the major strengths and the major weaknesses of the system. Among the elements of strength deriving from centralized control — which include the power to enforce decisions, to allocate resources, and to coordinate the component parts of the educational ladder into a system — perhaps the most important from the qualitative standpoint is the mechanism for establishing a minimum standard, at least in a formal way, for schools at every level and of every kind throughout the Soviet Union. But to the extent that the intensification and effectiveness of central control may enhance the positive elements of the system, they also increase its deferred costs and liabilities. Among the negative consequences of centralized control — which include progressively increasing difficulties of accurate planning, a capacity for committing policy blunders all at once on a national scale, and the unprecedented growth of bureaucracy — the most significant is the progressive paralysis of individual initiative which has been spreading through the entire Soviet educational fabric.

What are the Soviet objectives, requirements, and tasks which its educational system and its trained manpower are intended to serve?

The answer is provided by history. In the context of the war long ago declared by communism against

the free democratic societies, but still not taken seriously enough by many of the intended victims, the Soviet Union has committed the major part of the productive effort, skill, and talent of its people to the maintenance and increase of communist capability for the aggressive expansion of communist power. It has mobilized a major share of the social and economic resources of the areas it controls to advance its technological means toward achieving this objective. It is this objective which the Soviet educational system is ultimately designed to serve.

But any final evaluation, any attempt to seek ultimate meanings as we return to the inevitable questions which arise when we set the Soviet educational system against our own, brings us back to a single fact. It is the total Soviet government power of control over the allocation of all resources which alone concentrates educational resources in accordance with the government's scale of priorities.

The fact remains that the largest single school system in the world is under the control of the Communist Party, that it emphasizes science and technology more than any other educational system, and that, beyond a certain minimum of general education, it concentrates exclusively on specialized training at vocational, sub-professional, and professional levels.

What does this fact mean to Russia and her annexed neighbors and to the rest of the world? What does it mean to America?

Soviet education has been called a challenge — a defiant invitation to engage in a contest. That it presents a challenge, few observers would deny. But one must be clear as to the direction in which the challenge lies. The conclusions derived from the evidence here examined would suggest that the nature of the Soviet challenge is not expressed in numbers, nor even in quality, but in the degree to which national education and training efforts and performance are consonant with national goals. The essence of the challenge for the United States, therefore, is not to permit the scale, character, flexibility, vigor, and quality of American education to lag behind its expanding goals and responsibilities. These are the criteria by which American education must be judged, not by reference to how many engineers are or are not trained in the Soviet Union.

Soviet education has also been called by many justifiably apprehensive American observers a threat. The choice of terms, incongruously linking as it does the word "threat" with "education," is unfortunate, for its implication is false. The locus of the threat is not Soviet education but Soviet communism. For that matter, the threat derives in part from the fact that there is no true education under communism. Soviet education, with its emphasis on specialized training, has been transmuted into a threat to freedom only because Soviet scientific and technological capabilities are mobilized solely for the support and expansion of communist power. It is the employment of the accumulated resources of the Soviet Union and of its satellites to the ends of the Communist Party that constitutes the threat.

(Continued on page 212)

BUSINESS IN MOTION

To our Colleagues in American Business . . .

Should a fire break out in many of the modern stores, office buildings and institutions today, the excited cries of "Fire!" "Fire!" "Fire!" will have barely died before the fire is under control. For, located in the ceiling of these structures, and barely visible, are the automatic sprinklers that go into action in case of fire. And mighty important fire watchers they are, too. Although unnoticed and unattended for years, they must be able to go into immediate action, fast, and without fail.

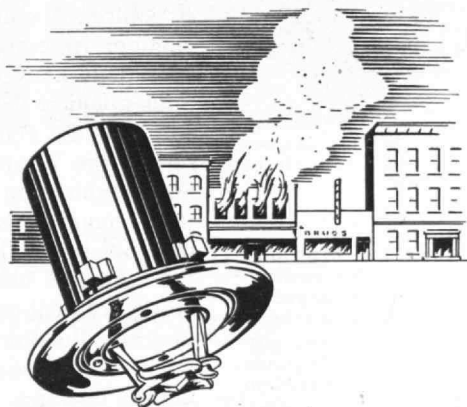
A vital part of this sprinkler is the body. A leading manufacturer of these sprinklers used to make these bodies of cast bronze. But in order to obtain the close tolerances required, the casting had to be excessively machined. Also, in order to assure fool-proof operation after installation, each casting, after machining and prior to assembly, had to be pressure tested. Due to porosity many of the castings failed and the number of rejects became prohibitive.

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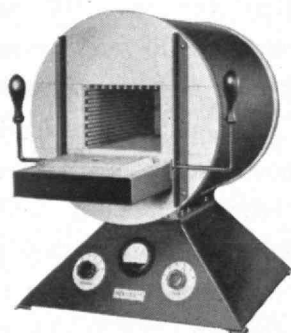
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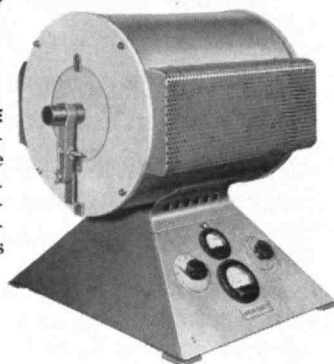
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SOVIET EDUCATION FOR SCIENCE AND TECHNOLOGY

(Continued from page 210)

Soviet education has also been viewed as a weapon which will help eventually to destroy the very threat that some observers believe it poses. This view reflects an abiding faith in education as a means of social progress; it derives from the identification of moral values and social goals with educational advances. In the Western democracies this identification is taken for granted. Consciously or unconsciously we tend to endow any education with those ideals which are counted upon to contribute progressively to the well-being and quality of human society. Since we are convinced that democracy thrives and grows strong on education, it is easy to presume that an inverse relationship is equally valid—that education automatically leads to the formation of democratic values and strengths.

It would seem that the philosophy of Soviet education militates against such a presumption. Nevertheless, as Soviet indoctrination has produced disillusionment with communist dogma, so Soviet educational gains in science and technology may produce disaffection with the political and economic structure of communism, stimulating a desire for change. In consequence of the advances and the spread of knowledge, it is already difficult for the Soviet Union to keep its people in the dark on the status of the economic, scientific, and cultural progress of the Western industrial societies. In this sense Soviet education is a promise both to the people now under communism and to the rest of the world. It may not be fulfilled by any direct emergence among the educated elite in the Soviet Union of the democratic political and economic ideas we associate with liberal education, but it does imply a growing capacity of the Soviet people for political and economic changes which could destroy Soviet communism.

Whether such changes can come about gradually, which seems to us very doubtful, or in a series of rapidly evolving developments, the crucial issue which will decide the future meaning and role of Soviet education and thus the future quality of Soviet society is the control over the allocation of its resources. When ultimately the Soviet people gain a decisive voice in the allocation of their intellectual

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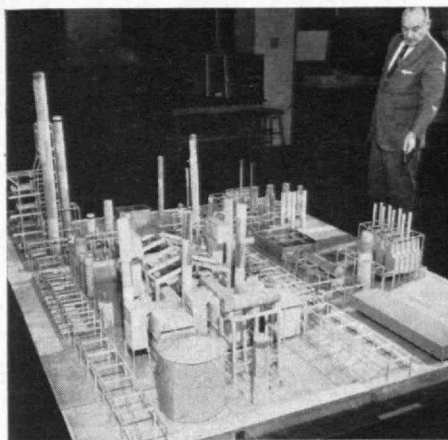
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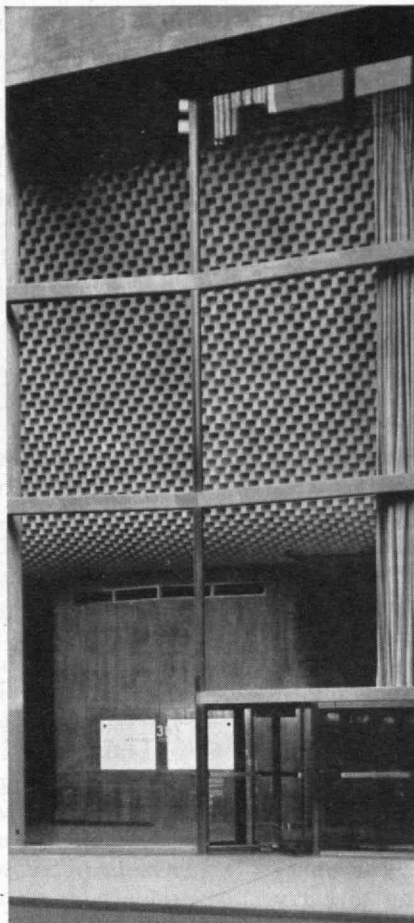
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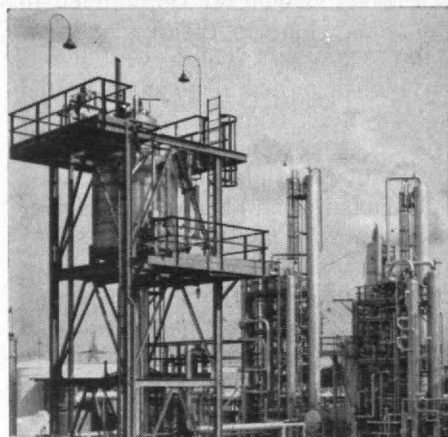
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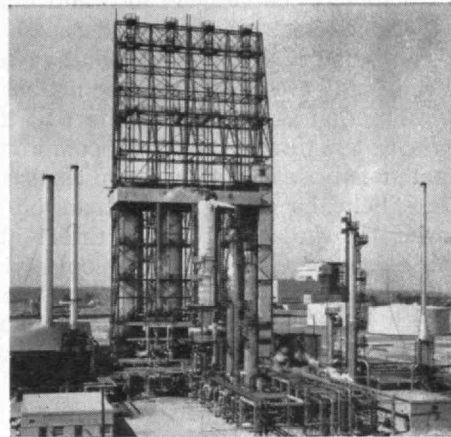
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SOVIET EDUCATION FOR SCIENCE AND TECHNOLOGY

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and physical resources, Soviet educational philosophy and pattern will certainly change. When that time comes, their schools will produce fewer but better engineers. After decades of virtual captivity their scientists will once again become members of the world's scientific community. Their universities will produce perhaps fewer physicists and mathematicians, but their graduates will include economists, historians, jurists, and philosophers. Science and technology will continue to advance—but in the service of the people—and the creative genius of the emancipated peoples will also find outlets in literature, the arts, and the humanities.

The broad implications of what we have set down in this study are clear. The free nations should know the direction in which lies the real threat to their survival lest through inaction, compromise, or short-sighted expediency they themselves should unwittingly help the growth and expansion of communist power. In the long run the threat of communism will be removed if the free peoples vigorously continue—Soviet Union or no Soviet Union—to pursue their highest social goals and to maintain their combined scientific, technological, and moral superiority. But for the free nations to believe that they can somehow achieve these goals while continuing to carry on their educational efforts and all the other pursuits

of life "as usual" is to refuse to face the realities of the world scene at this junction of history. If, in the face of the Soviets' superior power to allocate the resources under their control, democracy and economic progress for all nations are to prevail, and the freedom and dignity of every individual are to be attained, we free peoples must find a way to release a larger share of our aggregate resources and energy from nonessential material uses and devote them to the service of indispensable goals.

UNIVERSITIES — KEY TO AMERICA'S LEADERSHIP

(Concluded from page 203)

group of men who have perceived the basic problem of education in science, and who are determined to do something about it—whatever the cost in their own time and effort.

It is comforting, too, that their plan of concerted attack on these extremely complex problems of teaching is the product of experience gained in a series of intensive military studies, carried on by Professor Jerrold R. Zacharias and his associates over the past eight or 10 years with great effectiveness.

I take comfort in observing how often the methods, as well as the products, of our military research can be converted with striking advantage to the peaceful uses of our country. It is, after all, our basic aim to live in peace with the rest of the world. Whatever science, engineering, and technology can do toward achieving this end is a net gain for all of mankind.

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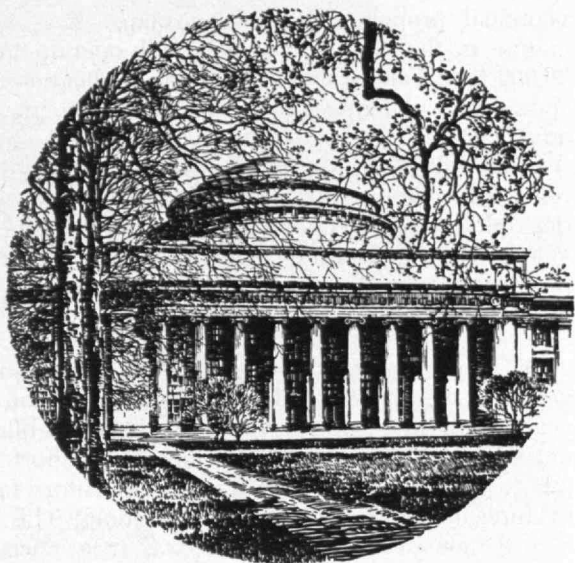
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INVENTION IN FLIGHT

(Continued from page 207)

ventional propeller "mother" airplane. The rocket engine is the only one which will operate above 50,000 feet. Yet for some important applications, the specialized advantages more than outweigh the disadvantages.

What will be the future of air-borne man? Will his remarkable flying craft evolve further? That would depend upon the conditions for invention and development. Hindrances, such as secrecy and compartmentalization, could delay progress.

Impediments to Progress

Da Vinci's extensive aeronautical studies and inventions were completely lost from view for 300 years, and his complete works were not published until 1930. Although much independent effort was put forth during this period, other inventors failed to duplicate most of da Vinci's inventions. This fact may demonstrate that da Vinci was truly ahead of his time. At any rate, the lack of awareness of his ideas may have delayed the development of aeronautics by hundreds of years. At least subsequent early developments were along entirely different lines.

The world's first liquid fuel rocket was flown by an American scientist, Robert H. Goddard, in 1926. The first German rocket of comparable speed and power was flown more than four years later. Yet within 13 years, massive V-2 rockets were being mass-produced in the Third Reich. Not until 1949 did the United States launch a large-scale rocket, the *Viking*, a full 23 years after the first American flight test. Why did rocket development take 10 years longer in the United States than in Germany?

Several independent American groups were engaged in serious rocket experimentation. These groups attempted correspondence with Goddard, but were at best rewarded with curt notes. When asked for information on his current work, Goddard would reply that it had not yet progressed sufficiently to justify a report. It is possible that the unfortunate compartmentalization of American rocket research may have been detrimental to rapid progress.

Conclusion

What implications are there here for scientific and technological progress? It means that the greatest
(Concluded on page 218)

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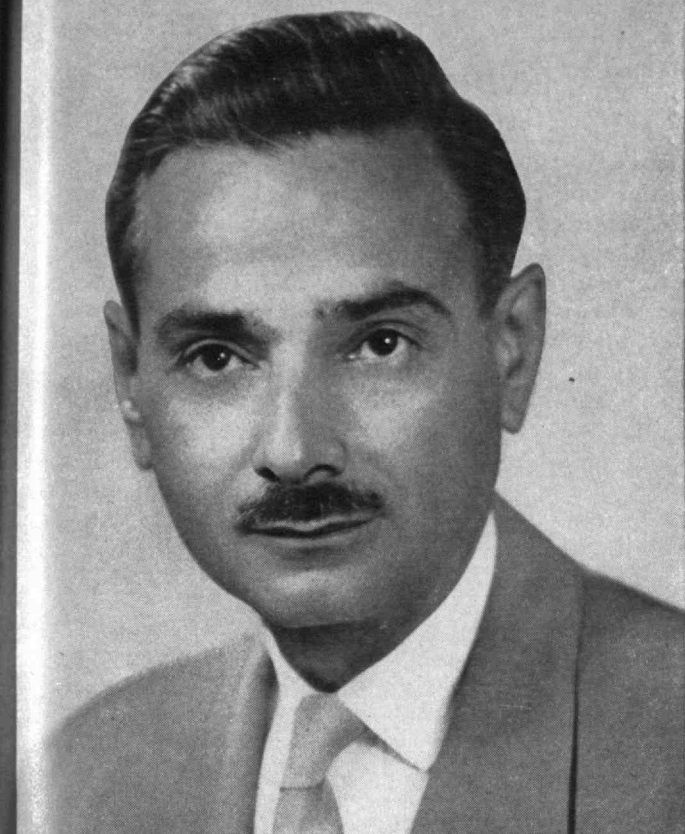
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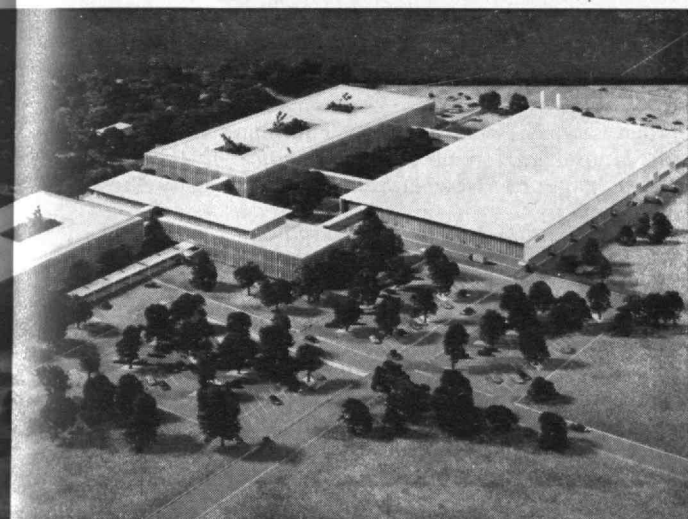
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The most important ingredients of creativity are curiosity and a real will to work hard. Of only slightly lesser importance is the feedback, or close working relationship between theoretician and observing experimentalist. We at AVCO also realize that a single creative effort is the output of a man, or, at the most, of a small group of men at any one time. It is, therefore, continuously subject to the criticism of other men and some even more stultifying forces. Some of these are economic or organizational and others are of a more subtle variety. We of the AVCO management consider it our responsibility to be alert to both positive and negative factors affecting creativity. We consider the ability of our men to create for the future, the most important function of the AVCO Research and Advanced Development Division.

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INVENTION IN FLIGHT

(Concluded from page 216)

progress can be achieved if there is an unimpeded flow of information on inventive problems between the scientists and engineers of the free world. Barring inventions for military purposes, where secrecy must be imposed, great advances would follow from international co-operation in science and technology. The individuals who can provide a breakthrough are rare indeed—and no nation has a monopoly on genius. The invention of the airplane depended on contributions from many countries. Great possibilities lie ahead for the congregation of nations that can reap the benefits of their assembled talents. Whether the free world or the collective world will be so favored remains to be seen.

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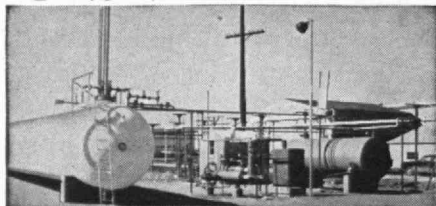
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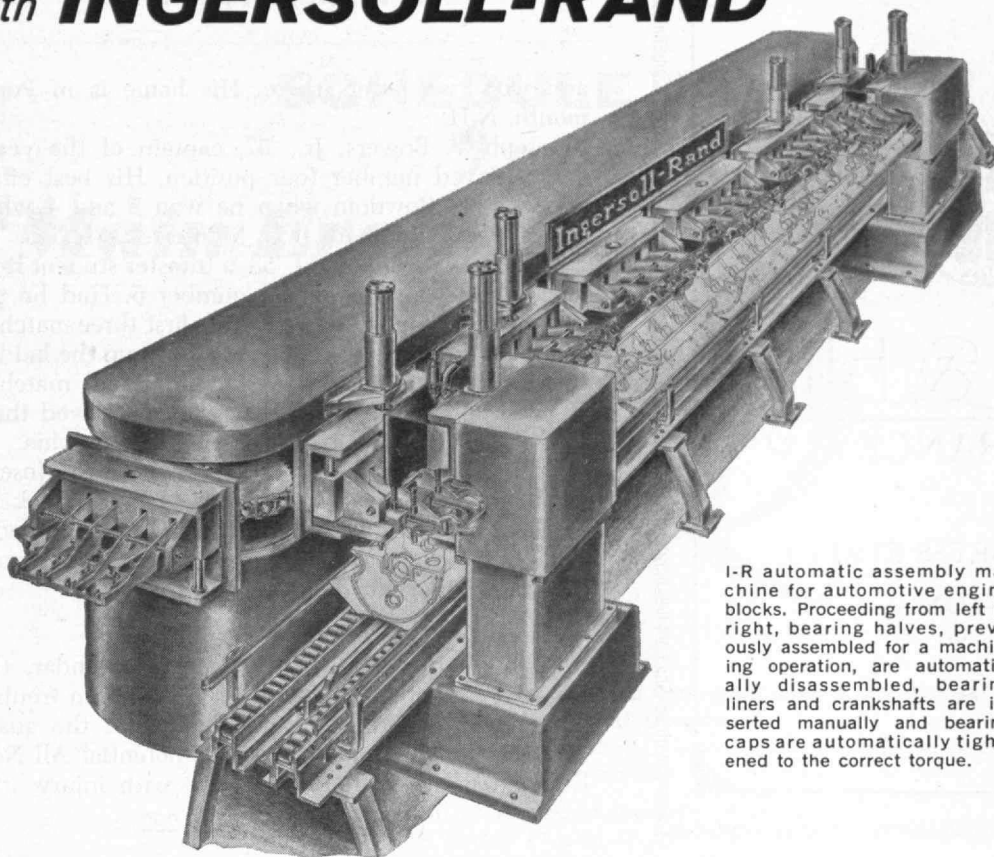
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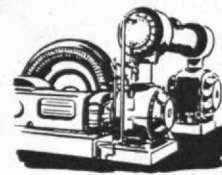
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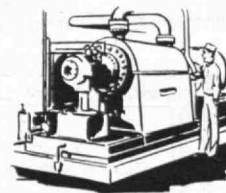
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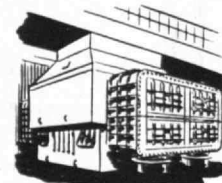
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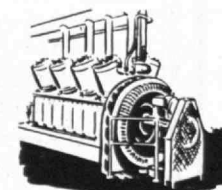
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TREND OF AFFAIRS

(Continued from page 200)

and won two letters there. His home is in Portsmouth, N.H.

Joseph T. Bowers, Jr., '57, captain of the year's team, played number four position. His best effort was against Bowdoin when he won 5 and 4 while shooting a 77. Joe hails from Monterrey, Mexico.

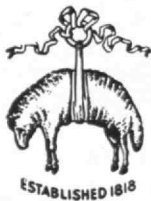
Charles E. Leonard, 3d, '58, a transfer student from Middlebury College played number 5. Had he not missed the indoor sessions and the first three matches, he would have had the chance to move up the ladder. Charlie won all but one of his individual matches. He will be ineligible next year, having played three years at Middlebury. His home is in Philadelphia.

William R. T. Smith, '59, of Winnetka, Ill., Joseph J. Mogilner, '59, of Birmingham, Ala., and Jack M. Fischer, '59, of Pittsburgh, alternated at the 6 and 7 spots. They were about of equal ability which gave the team important depth.

Lacrosse

Varsity — In terms of the Chinese calendar, this was the year of the snake bite. Grief fell on trouble, starting with medical disqualification of the goalie and withdrawal from school of a potential All New England mid-fielder. It continued with injury after

(Continued on page 222)



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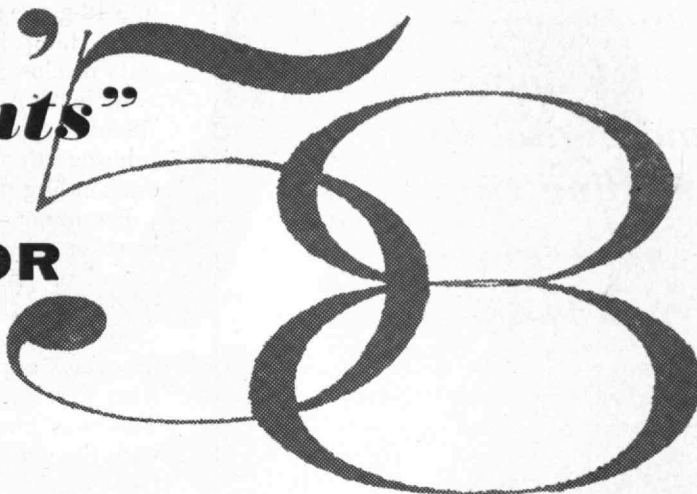
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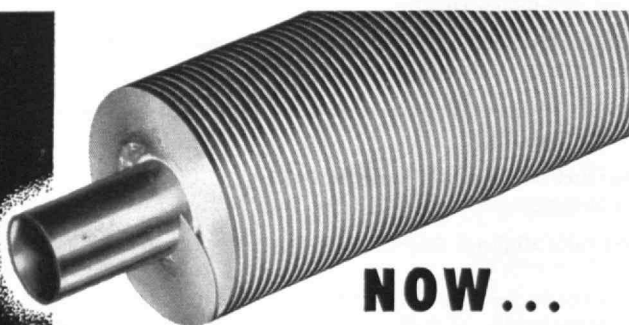
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TREND OF AFFAIRS

(Continued from page 220)

injury to individuals placed by necessity in unfamiliar key positions.

Despite the difficulties, the squad won two games in a 12-game schedule and was defeated by Harvard, New Hampshire, and the University of Massachusetts in close, hard-fought contests.

Richard A. Johnson, '58, and Huber R. Warner, '58, were elected co-captains at the end of the season. Johnson, an aggressive defense man, was named the outstanding player for the season.

Freshman — There were no experienced freshman lacrosse players; none who had played on a high school or preparatory school varsity, and only two who had been introduced to the game in preparatory school. However, as the practice sessions progressed, it became apparent that there were several good athletes and an abundance of enthusiasm and spirit. This was clearly illustrated in our first scrimmage with the varsity, during which our play, although not particularly skillful, was aggressive to the point of our being referred to by several varsity players as "Charlie Batterman's Hatchet Men!"

This was good. We were tough, aggressive, and learning fast. We won our first game with Lawrence Academy, 2-1. Then came a crushing defeat at the hand of Harvard, 17-1. Concern over a possible loss of spirit was dispelled by an overtime win over Nichols Junior College, 8-7, in a very hard-fought game, with Charles R. Conn, 2d, '60, our acting captain, scoring 5 goals including the winning overtime goal. There followed another overtime game with the University of New Hampshire freshmen, resulting in a tie, 2-2. According to their coach, this event was the first time that the University of New Hampshire did not beat M.I.T. As expected, Tech lost the next game with Andover, 9-1. An interesting note on this game: M.I.T. penalties 12; Andover penalties 3.

Our next game, against Governor Dummer, was the high light of our season and led to an upset victory, 8-7. We lost the next three games, one in overtime, despite the outstanding play of Donald F. DeReynier, '60, and Daniel N. Michael, '60, and a superlative job by our goalie, Phillip F. Frink, '60.

Having won three and tied one was the best record for an M.I.T. freshman lacrosse team. Starting as the

(Continued on page 224)

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TREND OF AFFAIRS

(Continued from page 222)

team did, completely inexperienced, they finished as a good lacrosse team, by freshman standards. The varsity will indeed be bolstered by Frink, our great goalie, and by the excellent defense play of John Y. Cadwallader, '60, Nathaniel Florian, '60, George B. Felts, Jr., '60, and the mid-field and attack play of Conn, DeReynier, Michael, and Bruce Craig, '60. Bruce was probably our most improved player, and did a fine job.

Tennis

Varsity — The varsity tennis team started its spring season with a southern trip during the Easter vacation. Eight players, the manager, and the coach made the trip. The southern trip proved to be a very successful one in all respects. The team returned with a record of 2 wins, 1 loss, and 1 incomplete (due to darkness). The incomplete match was with North Carolina State, and ended with N.C. State leading 4-3 with the Number One Doubles at one set all and M.I.T. leading 3-2 in the third set. In the Number Two Doubles, M.I.T. was leading 11-10. M.I.T. won the Number Three Doubles.

Our team suffered a rather severe blow when, for different reasons, we lost four of our first six players who had been with us during the fall of 1956. Despite the loss of so many players, we still had an in-

teresting season, winning 4 matches and losing 10. Three of the 10 matches ended with scores of 5-4, all of which we might have won. Our 5-4 loss to Brown was particularly exciting when the match was finally decided, 8-6 in the third set of the Number Three Doubles in semidarkness.

With about 18 active varsity players and about 25 freshmen, there would seem to be a need for another team where players can get the competition that they need to maintain their interest and develop their games. The establishment of a junior varsity team and schedule could very well meet this need.

Freshman — The total season record for the freshman tennis team was three wins and five losses. The team members were eager to learn. The most promising ones are: Thomas M. Cover, '60, Robert I. Carr, Jr., '60, and Robert M. Hodges, Jr., '60. Others who could also develop into good players are: George P. Koo, '60, Tony C. Hill, '60, Michael H. Seiler, '60, William C. Shih, '60, David A. Aaker, '60, and Ivan M. Kasser, '60.

A few players deserve special mention. Hill has basically a good game. Norman K. Dorf, '61, was playing the seventh position but left just before the last two matches. Cover, Carr, and Hodges have very good court attitudes and are very eager to learn. They should strengthen the varsity team.

Among a few of the players, who may not realize that concentration is such a large part of tennis, there was a lack of concentration on the court. They will learn, although so far they have had too little experi-

(Concluded on page 226)

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TREND OF AFFAIRS

(Concluded from page 224)

ence. Lack of experience also has shown up in other places, mostly in doubles play.

Track

The varsity track team finished a very average season with only one win over Williams College during their spring meets. The showing was due to lack of suitable training conditions during the late winter workouts. This cold weather prevented the runners from working on the boards, which is so important to the Tech runners, as they need time to get in good condition. This proves the M.I.T. need for an indoor cage to produce a winning team.

The season of 1957-1958 will be stronger, as a number of freshmen have shown promise on the track and field events. They lost only one dual meet to Governor Dummer, winning over Tufts, New Hampshire, Northeastern University, and Moses Brown.

The varsity team scored only two points in the New Englands. Because of examinations, only eight men competed at Brown University in this meet and one man reported at the IC4A's in New York's Randall's Island. Edward L. Hoyt, '57, scored one point there in the hammer, fifth place. The team is looking forward to next season with interest.

In a future issue of The Review we expect to include résumés on some of the 1957 fall sports: on varsity soccer, prepared by Coach Charles Batterman; on freshman soccer, prepared by Coach Benjamin R. Martin, Jr.; and on sailing, by Walter C. Wood, '17.

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and the prophet replied:

*"It is well to give when asked, but it is better to give unasked, through understanding."**

Gifts by Will

TO THE

Massachusetts Institute of Technology

The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it is better to give unasked, through understanding;

And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;

Therefore give now, that the season of giving may be yours and not your inheritors'."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and project his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

But the search, the finding, and the anticipated accomplishments are not enough; for without the properly-worded record, man's plan for the future may go awry. Hence the prophet's importuning, "— give now," should be heeded. The giving need not be an immediate physical transaction, for written directions replace the spoken word when the speaker is no longer present, and a donor can frequently make by will a gift which is larger than he can make while living. Truly, *"it is well to give when asked, but it is better to give unasked, through understanding."*

A booklet "Gifts by Will," outlining different forms of bequests to M.I.T., is available to you or to your attorney by writing to:

Director of Development
Massachusetts Institute of Technology

Cambridge 39,

Massachusetts

* "The Prophet" by Kahlil Gibran

ALUMNI AND OFFICERS IN THE NEWS

Steppingstones . . .

In addition to the 31 Alumni recorded on page 195, other Alumni advanced to new posts include:

ALAN G. RICHARDS'19 as manager of Client Relations, Bjorksten Research Laboratories, Madison, Wis. . . . MARTIN L. TRESSEL'24 as chairman of Junior Tennis Development, U. S. Lawn Tennis Association . . . JOHN F. LUCEY'29 as assistant superintendent for Engineering and Research, New York State Public Works Department.

ALBERT G. H. DIETZ'32 as chairman, Technical Studies Advisory Committee, Federal Housing Administration . . . ARTHUR C. RUGE'33 as director of Research and Development, Electronics and Instrumentation Division, Baldwin-Lima-Hamilton Corporation . . . VERNON L. PACKARD'36 as director of Public Utilities, City of Niagara Falls, N. Y.

CHARLES V. F. DE MAILLY'40 as manufacturing assistant to the vice-president and general manager, Plymouth Cordage Industries, Inc. . . . LEWIS D. FYKSE'41 as assistant to the director of Marketing, American Machine and Foundry Company . . . STANLEY M. SMOLENSKY'41 as project manager, Missile Systems Division, Raytheon Manufacturing Company.

MONROE R. BROWN'42 as manager of Planning and Scheduling, Electronics Division, Curtiss-Wright Corporation . . . A. PAUL L. HOTTE'42 as general sales manager, Metallurgical Division, P. R. Mallory, Indianapolis . . . WILLIAM R. JOHNSON'42 as chief research metallurgist, Associated Spring Corporation, Bristol, Conn.

IRÉNÉE DU PONT, JR.'43 as director, Sales Service Laboratory, Polychemicals Department, E. I. du Pont de Nemours and Company . . . LOUIS W. MAXSON 2-'44 as superintendent of Mill Products Engineering, Western Brass Mills Division, Olin Mathieson Chemical Corporation . . . DONALD E. BURKE'46 as service co-ordinator, Allied Products, Inc., St. Petersburg, Fla.

WEEMS E. ESTELLE'46 as vice-president — Operations, Data Control Systems, Inc. . . . NED A. SPENCER'46 as engineer-in-charge, Smithtown Laboratory, Wheeler Laboratories, Inc. . . . WARREN H. TURNER'46 as district traffic manager, New Jersey Bell Telephone Company.

JOHN L. WANDRUSCO'46 as manager of Marketing, Latrobe Steel Company . . . RICHARD A. KNIGHT'47 as treasurer, General Vacuum Corporation . . . MICHAEL J. KAMI'48 as director of Product Planning, International Business Machines Corporation.

J. WADE MILLER, JR.'48 as manager, Central Services Division, Dewey and Almy Chemical Company Division, W. R. Grace and Company . . . HARRY J. LANG '49 as sales manager, Boonton (N. J.)

Radio Corporation . . . ERWIN G. LOEWEN '49 as technical director, Taft-Peirce Manufacturing Company . . . CHARLES W. SHERMAN'49 as senior research associate, Jones and Laughlin Steel Corporation . . . JOHN J. KOCH'53 as director of Research and Development, Industrial Furnace Division, Hevi Duty Electric Company.

Book Marks . . .

Research: Management's Problem Tool by MAURICE HOLLAND'16 is a pioneer book discussing research from the top management point of view. (New York: Harper and Brothers, 1957.)

"A Study of the Science and Mathematics Courses elected by the 1956 Senior Class, and the Number of Seniors who planned to specialize in scientific fields in the Academic High Schools in New York City" is by SAMUEL SCHENBERG'20. (New York: Board of Education, 1957, 31 pages.)

Basic Soils Engineering by BENJAMIN K. HUGH, JR.'28 gives practical information as well as broad coverage of the basic aspects of soil properties and the engineering behavior of soils. (New York: The Ronald Press, 1957, 556 pages, \$8.00.)

Closed Circuit Television: System Planning by RODNEY D. CHIFF'33 and M. A. Mayers will guide those who wish to install and use closed circuit television. (New York: John F. Rider, Inc., 1957, 250 pages, \$10.00.)

Notes on Analog-Digital Conversion Techniques, edited by ALFRED K. SUSSKIND'50, discusses new problems that

arise when digital equipment is linked with physical systems. (Cambridge: Technology Press, 1957, 410 pages, \$10.00.)

Soviet Education for Science and Technology by ALEXANDER G. KOROL, M.I.T. Division of Sponsored Research, is based on original sources only recently available and examines purposes, strengths, weaknesses, and potentialities of the Soviet educational structure. (Cambridge: Technology Press, 1957, 513 pages, \$8.50.)

Milestones . . .

Among the Alumni to whom birthday congratulations are appropriate this month are three who are due to celebrate their 90th anniversaries, seven their 85th, and three their 80th, as listed below with their respective dates of birth:

February, 1868 — BERTRAM H. DAVIS '90 on the 15th; JANE R. CUTLER'99 on the 16th; and JOHN S. CODMAN'93 on the 25th.

February, 1873 — RICHARD O. ELLIOT '96 and JEDIDIAH A. MORRILL'99 on the 6th; JOSEPH H. KIMBALL'94 on the 9th; WILLIAM H. KIMBALL'99 and EDWARD I. MARVELL'94 on the 22nd; JAMES PURDON'98 on the 27th; and RALPH R. LAWRENCE'95 on the 28th.

February, 1878 — FRANCIS G. FRINK '00 on the 7th; HENRY TUBBS'00 on the 19th; and HERMAN R. HUNT'00 on the 26th.

With these 13, the rolls of the Alumni Association will include a total of 59 living nonagenarians and 575 octagenarians.

Obituary

HARRY H. YOUNG'91, December 26
MRS. MARY LOWELL (COOLIDGE) BARTON '92, November 4°

GERARD SWOPE'95, November 20°
ELBRIDGE C. JACOBS'96, December 12°
RAY C. FAUGHT'98, November 20°

HEBER A. HOPKINS'98, November 2°
HOMER E. SARGENT'98, November 15°
MILES S. RICHMOND'99, December 23

MRS. ALPHEUS G. WOODMAN (MARION LOUISE CADE)'00, November 14°
HEBER N. HAYNES'01, September 28

ROBERT V. BLAISDELL'02, May 27°
PAUL R. B. DICKSON'02, November 4°
JOHN M. EGAN, JR.'02, September 30°

HERCULES GEROMANOS'02, December 16
WILSON P. HARRIS'02, December 18
CLAUDE A. ANDERSON'05, December 17

ALDEN MERRILL'05, November 24°
JACOB A. FOTTLER'08, August 16
SYDNEY V. JAMES'08, November 14

JAMES H. CRITCHETT'09, December 17
ALLEN E. SHIPPEE'09, November 7
HERBERT J. STIEBEL'09, December 7

LEW M. ATKINS'10, October
PERLEY K. BROWN'11, November 16°

HOWELL TAYLOR'14, September 22
CHARLES W. LOOMIS'16, December 19

WILLIAM J. SLOAN'16, November 3°
JOSEPH H. AXTMAYER'17, May 5°
WILLIAM C. HADDOCK, JR.'19, September 8, 1956°

JAMES P. THURBER'19, October 19°
ROBERT T. KNAPP'20, November 7°
ROLLIN F. OFFICER'21, March 25

WALLACE A. ANDERSON'22, July 4, 1955
JOHN N. DU VERNET'22, November 13°
RODMOND S. MAHAFFY'22, May 4°

RUSSELL ROBB'22, June 3
LAWRENCE NOVACK'24, October 1
CHARLES M. PHELPS, JR.'24, November 18°

HOWARD F. SMITH'25, November 7°
HENRY L. BURGESS'28, June 2°
JAMES M. KAY'28, December 2

WALTER W. VANBENTHUYSEN'31, April 28°
JOSEPH L. THISTLE'32, October 26°
RICHARD K. WEST'38, December 18

ALBERT W. VANNOSTRAND, JR.'56, November 23°
° Further information in Class Notes

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Alabama

The Alabama Club met Wednesday evening, December 4, for dinner at the Mountain Brook Club and to honor our special guest, Dr. John T. Norton '18 of M.I.T.

President George J. Fertig '24 led off the program by introducing the several guests of our members, who were present because of their particular interest in Dr. Norton and his subject. Members present were: James G. Creveling '25; James R. Cudworth '21; George J. Fertig '24; George T. Gambrell, Jr., '07; Willard F. Gray '47; William H. Hassinger, Jr., '27; Lawrence T. Haugen '23; Prescott V. Kelly '13; Laurence D. Luey '29; Douglas F. Elliott '24; Harry Majors, Jr., '10-'44; Kenneth M. McDonald '24; John W. Powers, Jr., '33; Merrill E. Pratt '16; Theodore F. Randolph, '10-'44; Joseph G. Reid '08; Nelson Smith '35; Ray E. Strickland, Jr., '38; David Thurlow '41; Fernand C. Weiss '13; Conrad Wesselhoeft, Jr., '49; John H. Wood '34. President Fertig gave a report on the number of students now at M.I.T. from Alabama, and from Birmingham, and commented on the work of local members of the Educational Council. He also announced that Russell W. Ambach '24 of Cambridge has been appointed representative of the Alabama Club on the Alumni Council.

Dr. John Norton was introduced, and he addressed our group in his dual capacity of chairman of the Faculty and professor of the physics of metals. Particularly, he stressed the value of the Educational Council in the increasingly difficult problem of admissions and pointed out the Institute's continued concern that actual matriculations represent the top cut of applications. (Here indicated may be an on-the-spot follow-up of admission notice to outstanding candidates by the Council and Alumni.) Dr. Norton outlined the study which has been given to a point of adjustment in the undergraduate school, resulting either in a two-year terminating certificate or nomination to continue for a degree; he spoke of the cautious approach to such a plan necessary because of student apprehension and the misplaced notion of "junior school" division. The resulting advantages to the Institute, and to students who pass the hurdle, are apparent; but presently there are no plans for this break. He told us of the growing need for space to expand facilities at the Institute, a need which will increasingly affect long-range plans for curriculum and admissions.

The day's compelling topic of Russian education and science was further illuminated by Dr. Norton's discussion of visits to this country by Soviet industrialists, particularly those in metallurgy, and what was learned through them of Russian pro-

duction and training of specialists. — NELSON SMITH '35, *Secretary-Treasurer*, 1642 Brown Marx Building, Birmingham 3, Ala.

Boston Luncheon

The M.I.T. Club of Boston met Thursday, November 21, 1957, at 12:15 P.M. at the Union Oyster House.

About 70 Alumni assembled to hear Joseph J. Snyder '44, Vice-president and Treasurer of the Institute, speak on the administration of the financial side of Tech. He described the responsibility and procedures of the Finance Committee of the Corporation with respect to the Institute investments and the operations of his office in the selection of investments for the portfolios of the Institute.

The investment policies of the Finance Committee with respect to the investment in bonds, real estate, and common stocks were presented. The relative position of M.I.T.'s investments among those of the educational institutes of the country and the proportion in common stocks at the Institute were compared with the investments of other colleges and universities having substantial investment portfolios.

The third meeting of the Luncheon Club took place on Thursday, December 19, when Houlder Hudgins, Professor of Industrial Management at M.I.T., spoke on "Retailing — Catalyst of a Free World." — PARKE D. APPEL, *Secretary-Treasurer*, 28 Winthrop Road, Belmont 78, Mass.

Central Massachusetts

Our 1957-58 season got off to a splendid start on December 2 with an excellent dinner and program provided by the Norton Company, Worcester. Arrangements for the evening were made by Dick Harris '48, Program Chairman, and Ralph Gow '25, Executive Vice-president of Norton Company. Wallace Howe '22, Vice-president and director of Research and Development, welcomed the group of 80 Alumni and introduced the speakers for the evening. The subject was "New Development in Ceramics." Fred Curtis, sales manager of New Products, and several of his sales engineers gave an outline of many new ceramic products in the wear resistant, cutting tool, and spray coating fields. Of particular interest to the group were applications of the wear resistant products and ROKIDE (Trade Mark) spray coatings to the rocket, guided missile, and ram jet programs. Several visual aids were used to complement the talks, including a well designed display of new products.

Bob Dawes '26, our new President, with the help of the executive committee, has arranged an exceptionally fine program for the year. We have sent out pocket 1958 calendars with meeting dates and information on the reverse side. Any person who has not received the calendar

may get one from the Club Secretary. Our next meeting will be on February 4 at the Stockholm Restaurant, Worcester Airport. Dr. Faulkner will speak on the "Care and Feeding of Husbands." — Ladies' Night!! Also, remember "Brainstorming" with Whit Ferguson '22 on April 10 at the Hotel Bancroft, Worcester. Our final meeting will be the Annual Meeting and Ladies' Night on May 23. Dinner will be at the Faculty Club, and then we will go to the Boston Pops. — IRVINE F. WILLIAMSON '50, *Secretary*, 21 Eastwood Road, Shrewsbury, Mass. HARRY B. DUANE, 3D, '57, *Assistant Secretary*, 22 Elmwood Street, Worcester, Mass.

Central New York

We held our yearly ladies' night meeting on November 15, and, as usual, the turnout was excellent. Following supper at the Brae Loch Inn in Cazenovia, the assembled members, their ladies and guests, heard Mr. Fred Lounsbury, manager of Sales Development of Oneida, Ltd., deliver an illustrated talk on the manufacture and history of silver made by the descendants of the original Oneida community.

Members who attended with their wives were: Dr. Dewey J. Sandell, Jr., '49; Gregory G. Gebert '50; Steven W. Evans '47; Russell S. Stott '50; Joseph J. Bongiovanni '48; Jack P. Lombardi '48; A. Gordon Wheler, Jr., '52; John M. McGrew, Jr., '54; Dr. Bernard Chertow '48; Donald E. Stearns '31; Abraham I. Prankoff '53; Alden A. West 2-'44; Stewart M. Hill '43; William R. Schuler '32; Albert W. Vinal '54; Darwin G. Traver '45; Gilbert A. Bruno '39; and Edwin A. Gruppe '22. — GREGORY G. GEBERT '50, *Secretary-Treasurer*, 33 Trelign Drive, North Syracuse, N. Y.

Chicago

Chicago Alumni began another active year under the able leadership of Robert C. (Bud) Meissner '43 with a luncheon and plant tour at Jewel Tea Company in September. Virgil Otto '43 arranged and chairmanned the program, and 100 members turned out to visit Jewel Tea's new completely automatized warehouse and bakery in Melrose Park. A luncheon was served and Mr. George Clements, President of Jewel, addressed the group. The Club is indebted to Mr. Clements for his hospitality and for giving the Club an insight into up-to-date operations of a large retail food chain.

In November, the Club heard a remarkably lively and penetrating speaker, arranged by Robert L. Silberman '48. Dr. Dan Q. Posin, professor at De Paul University, consultant for Chicago Museum of Science and Industry, and a radio and television personality, led the club members and their wives through the coming possibilities of Sputniks, satellites, and space travel. Dr. Posin has unique ability

to entertain an audience while filling in aspects of the space-time continuum that Alumni may have missed while undergraduates.

Other fall activities involve the Club in assisting in planning for various Institute activities, including the important Faculty Salary Program, chairmanned by Robert C. Gunness'34 in the Chicago region. In connection with these activities, we have been favored by the visits of a number of distinguished members of the Institute. — JOHN R. KIRKPATRICK'48, *Secretary*, Arthur D. Little, Inc., 9 South Clinton Street, Chicago 6, Ill.

Miami Valley

For the first time in many years, wives of members were initiated into the dark doings of a regular meeting of the Club at Benham's Restaurant in Oakwood, Ohio, on December 9. The occasion was a dinner and discussion, with the subject of the evening being City Planning. There to grace the group with expert knowledge was Robert J. Flynn, planner of the city of Dayton, who used highway transportation as an example of what is in store for the people of this area. We obtained and acquired a background in not only the technical facets of road building, such as banking and grading for maximum safe speed, but also the economic and political tones which always accompany undertakings of the subject magnitude.

Members attending with their wives were Zach Abuza'41; Max Davis'53; Paul Drouilhet, Jr.'54; Otto Hardacre'36; Steven Heller'43, *President*; E. Kohler, Jr.'29; L. W. Mayer'52; Dave Moyer'24; Bob Olsen'42; R. E. Robillard'20; and Ed Rossman'18.

The "balance of trade" for the Club lately has been rather unfavorable. Welcome is extended to J. M. Klyce'41. John M. Reed'42 has been transferred by North American Aviation to 2110 Lytham Road, Columbus 21, Ohio; and John H. Ruggles'32 by General Motors from the local inland to the Delco Appliance Division, Rochester, N. Y. — ROBERT T. OLSEN'42, *Secretary*, The Standard Register Company, Dayton 1, Ohio.

New Mexico

Considerable excitement and activity has been engendered in the New Mexico Club because of the M.I.T. Regional Conference scheduled for November 8, 1958, in Albuquerque. Regional Conferences have become sufficiently popular that two a year are becoming the rule. It is an honor to the New Mexico Club that so young an organization has been considered in this program. The general chairman of the conference is Mr. Fred J. Given'19, who is a vice-president of Sandia Corporation. Assisting him is a committee consisting of Ted Alexander'32, our Club *President*; Max Ilfeld'24; Bill Perret'30; Bill Rollosen'47; and Clarence Rothgeb'30. Enthusiastic support has been evidenced by influential local persons, such as the president of the University of New Mexico, Dr. Popejoy, and Dr. McRae, president of Sandia Corporation, largest in New Mexico. The wholehearted support of local businessmen is

also aiding our efforts. At present, the date of the conference has been set and the site of the meeting and dinner chosen. A great deal of work remains to be done to equal the fine records of previous regional conferences, however.

It was the Club's pleasure to entertain Professor Donald Harleman'47 of the M.I.T. Civil Engineering Department at a dinner meeting and social gathering on November 8 in Albuquerque. Professor Harleman's mission, involving visits to secondary schools on behalf of the M.I.T. Admissions Office, touched off a lively discussion on the subject of education.

A very pleasant dinner meeting on December 10 was occasioned by a visit from Executive Vice-president of the Alumni Association H. E. Lobdell'17, and his charming wife. Dean Lobdell pleased all present with brief accounts of his travels in Europe but addressed himself mainly to the task of education and guidance for the forthcoming regional conference. A tour of all possible conference sites during the day had resulted in choice of the most appropriate, and so discussion at the dinner revolved around attendance promotion and subject matter.

Those participating in the dinner and social meeting following were Mr. and Mrs. F. C. Alexander'32; Mr. and Mrs. B. L. Basore'52; Mr. and Mrs. F. E. Burley'30; Lieutenant and Mrs. J. Darr'48; Mr. and Mrs. E. Edmunds, Jr.'42; Mr. and Mrs. F. J. Given'19; Mr. and Mrs. J. E. Gross'50; Dean and Mrs. H. E. Lobdell'17; Mr. and Mrs. M. L. Ilfeld'24; Mr. and Mrs. W. R. Perret'30; Mr. G. W. Rollosen'47; Colonel and Mrs. C. E. Rothgeb'30; Mr. and Mrs. F. Skinner'50; and Mr. and Mrs. B. J. Weston'54. — J. E. GROSS'50, *Secretary*, 705 Cagua Drive, S.E., Albuquerque, N. M.

New York

The Silver Stein Dinner, held on November 18 this year, honored popular George Dandrow'22, who has been active in M.I.T. Club and Alumni affairs ever since his graduation. The dinner, an Alumni affair, was highly successful, with nearly 300 attending to honor George and to hear Dr. Julius A. Stratton'23, Acting *President* of M.I.T., substituting for Dr. James R. Killian'26, who was unable to leave Washington after having just been appointed to his new post of special assistant for science and technology. Dr. Stratton stressed the importance of improving secondary school education along scientific lines to meet today's challenges.

The dinner was held in the Grand Ballroom of the Biltmore Hotel, which hotel houses our new and comfortable Club quarters. The dinner was preceded by a cocktail hour, which time enabled the guests to visit one another and to greet the large delegation from the Institute.

More and more out of town Alumni are making the Club their New York headquarters. In recognition of this, the officers plan to retain the current nominal dues for out-of-towners. Why not drop into the Club the next time that you are in the City?

The class luncheons, technical dinners, and the industry dinners have maintained utilization of the Club at a high level. In

addition, larger numbers of Alumni are lunching at the Club as well as dropping in for cocktails. Also, many members are bringing business associates and guests to the Club for luncheon and for cocktails, before dinner appointments, the theater, or before going home. At the monthly class luncheons, the Class of 1924 has had especially good representation. The Classes of 1917, 1925, and 1910, 1940, 1916, 1938, 1936, and 1937 have also had excellent turnouts. Why not plan to attend your next class luncheon? If you do not have the schedule, call Miss Gilliland, Executive *Secretary*, who can supply all necessary details.

Seen lately at the Club have been the following persons: Sam Reynolds'22; Warren Chaffin'20; Harvey Kram'42; Gregory Dexter'08; Win McNeill'17; Dale Spoor'22; Jim Margolis'52; Liz Clark'54; Tony Hittl'36; Thornton Smith'45; and, of course, Gene Smoley'19, Club *President*; Ken Finlayson'35, chairman of the House Committee; Eddie Edgar'35; Frank Kurtz'22; Norman Kreisman'48; Tom Creamer'40; Ray Harper'41; D'Arcy Brophy'16; Al Glassett'20; Gabby Garbarino'33; ubiquitous Joe Conrad; and literally hundreds of others. — ROGER G. BLUM'41, *Secretary*, 285 Old Colony Road, Hartsdale, N. Y.

Northern New Jersey

Dr. Elbert P. Little, Executive *Director* of the Physical Science Study Committee of M.I.T., addressed the M.I.T. Club of Northern New Jersey on December 3, 1957. Dr. Little described the work of the Committee in preparing a new high school physics curriculum embodying more thorough and advanced study of physics and less emphasis on technology than the average high school physics course. The talk was illustrated with movies and a laboratory demonstration of waves in a fluid medium.

About 75 high school principals and science teachers attended the meeting as guests of the Club, and showed considerable interest in the Committee's recommended curriculum, which is being tried experimentally in eight high schools and preparatory schools in the nation. The meeting was also attended by about 75 club members. The meeting was held in Paramus, in the northern portion of the vast area served by the Club, and was attended by several members who are seldom able to attend meetings in the usual East Orange location. — LOUIS F. KREEK, JR.'48, *Assistant Secretary*, 82-B Woodland Road, Short Hills, N. J.

Rochester

The Club held its annual Christmas Luncheon on December 30, 1957, at which time area students now at M.I.T. were invited as guests of the Club. There are currently about 40 boys from the Rochester area at the Institute either as graduate or undergraduate students. The following father and son combinations are represented: R. M. Phinney'04 — R. A. Phinney'58; R. M. Wilson'30 — S. W. Wilson'59; H. R. Couch'20 — H. R. Couch, Jr.'59.

A new feature initiated at the Christmas

Luncheon this year was that local high school seniors interested in M.I.T. were invited by the educational counselors. This combination of current undergraduates and high school boys was most satisfactory. Professor Averay Ashdown '24 was again with us for this affair and brought us up-to-date news about the Institute.

Plans are being made by M. F. Doyle '50, Program Chairman, for a meeting in the spring concerning secondary school requirements for science and engineering education. — J. K. LITWITZ, *Secretary*, 191 Rogers Parkway, Rochester 17, N. Y.

South Texas

Dr. Robley D. Evans, professor of physics at M.I.T., was guest speaker at the first 1957-58 meeting of the M.I.T. Club of South Texas on Thursday evening, October 24, 1957. About 70 men and ladies gathered at the Westwood Country Club, outside Houston, at 7:00 P.M. to learn about present-day operations at M.I.T.

Club President George B. Morgan '20 took a few minutes to introduce the club members and their ladies to each other at the beginning of the meeting. The President then reported on the second annual Alumni Officers' Conference, which he attended in Cambridge on September 6 and 7.

Dr. Evans gave an interesting talk which was both entertaining and informative about current conditions at the Institute. He stimulated so much interest that his eager audience kept him busy answering questions for a full hour after his presentation.

The Club hopes to hold another meeting this spring. — SID F. ATLAS '43, *Secretary-Treasurer*, 3779 Richmond Avenue, Houston 6, Texas.

Washington

A dinner meeting was held November 20 at the Cosmos Club. The meeting was well attended and featured John T. Rule '21, Dean of Students at M.I.T.

By the time this sees print, our traditional Christmas Luncheon for M.I.T. students in the area, scheduled for December 27 at the Army-Navy Club, should be past history. Twelve local men who are prospective students have been invited. The program featured Adolphe (Dad) Wenzell '17, Vice-president of the World Bank, and two students to give us the word on current events and social life on the campus.

Washington's first regional area conference is now scheduled for March 1! This will be an all-day affair and will be held at the Shoreham Hotel. Eminent scientific speakers will be on the program, and it is planned that Dr. James R. Kilian, Jr., '26, recently appointed special assistant to the President for science and technology, will deliver the featured evening address. All area Alumni will receive notices by mail. Let us know if we do not have your address. The Conference Committee is composed of the following: Thomas Meloy '17, chairman; Robert W. Blake, Jr., '41, vice-chairman; Thornton W. Owen '26, publicity chairman; Charles

S. Butt, Jr., '41, arrangements committee chairman; Adolphe H. Wenzell '17, financial committee chairman; and Francis duPont '17, invitations committee chairman.

Next meeting will be in May. This will be a Ladies' Night and will also be the occasion for election of officers. — CHESTER N. HASERT '41, *Review Secretary*, 2475 Virginia Avenue, N.W., Washington 7, D. C.

Western Pennsylvania

The regional conference, entitled "Science and Society — A Program for Progress," held on December 7, 1957, in the Penn-Sheraton Hotel in Pittsburgh, Pa., was the most successful event in the history of this Club.

An average of 400 Alumni and friends heard Dr. Julius A. Stratton '23 and our other distinguished visitors from M.I.T. present the latest thinking on vital scientific topics as they apply to modern society.

At the dinner, Irving White Wilson '11, Chairman of the Board, Aluminum Company of America, received Alumni honors from Gilbert M. Roddy '31, President of the Alumni Association.

The Club welcomed Don Severance '38, H. E. Lobdell '17, Bob Kimball '33, Jack Sheetz '42, and Jeff Wylie, all from M.I.T.; and Ray Bond '23, Ted Miller '22, and Bill Sherry '21, members of the Corporation; and George Dandrow '22 and Gil Roddy '31, President of the Alumni Association.

Bill McCullum traveled the farthest. He came all the way from Los Angeles.

The success of this conference should be accredited to Tom Stephenson, 3rd, '45, general chairman; Ingvald Madsen '33, arrangement and registration; Jerry Hahn '47, publicity; Henry Avery '41, special invitations; Bill Laird '43, program; Julian Gammon '45, hospitality; Elwood Koontz '36, financial; and Al Oxenham '45, speakers' dinner. Working with this group as advisors were the steering committee members: E. J. Hanley '24; John Lawrence '32; J. W. Barriger, 3rd, '21; Ralph V. Davies '16; Raymond Mancha '26; Jerry McAfee '40; H. H. McClintic, Jr., '19; Walter F. Munford '23; G. A. Price; W. F. Rockwell, Sr., '08; L. E. Sawyer '10; H. S. Turner '36; and I. W. Wilson '11. — STUART D. MILLER '32, *Secretary*, 3043 Dwight Avenue, Pittsburgh 16, Pa. GEORGE M. COLVILL '51, *Assistant Secretary*, R. D. 1, Eightyfour, Pa.

Women's Association

On November 19 the M.I.T. Women's Association opened its new season with a dinner meeting at the Faculty Club. Members were hostesses to a few husbands and other guests. Phyllis Winter Grosswendt '42, the President, presided over a short business meeting following dinner. It was called to our attention that Eliza P. Huntington '85 had recently celebrated her 100th birthday. In recognition of this unusual event, the Association voted to make her an honorary member.

In addition to the bequest of \$2500 left to the M.I.T. Women's Association in the will of Edna Spitz, in memory of her sister Gertrude '17, the Association has been willed \$500 by Sarah Hall Bone-

steel '94 of Chicago. A letter has been received from her college friend Florence Wood Ewing '97 of Williamsburg, Va., telling of their student days at M.I.T. and of Mrs. Bonesteel's activity in printing books for the blind. We are most grateful to these loyal Alumnae whose interest in the welfare of women students at the Institute never diminished.

Roland B. Greeley, Associate Professor of Regional Planning, spoke entertainingly about urban renewal, pointing out how this activity may be influenced in the future because of the ability of the wage earner to own his own home, improvements in communication media, increasing numbers of automobiles, and changes in government regulations and laws. The next meeting will be held February 1. — KATHERINE SALISBURY HAZEN '28, *Recording Secretary*, 81 Clark Street, Belmont 78, Mass.

CLASS NOTES

1891

Your Secretary has received from the Review Office in Cambridge a newspaper clipping from the *Boston Herald* of November 10, 1957. This is the story of the dedication of a "Dana Room," which has been erected as part of the edifice of the First Parish Church of Brookline, Mass., a church with which the Dana family has been associated for many years. It is a memorial to the memory of Gorham Dana, one of the most distinguished and personally lovable of our classmates.

That we may have the whole story of this remarkable man before us, I quote from what appeared in the *Technology Review* notes in November, 1956, at the time of his death: "Gorham Dana died on June 22, 1956, and notice in the *Boston Herald* reads, in part, as follows: 'Gorham Dana, 87, of 44 Edgehill Road, Brookline, long a civic leader in Brookline, died yesterday. He had served for 20 years as chairman of the Brookline Planning Board, and was an organizer and the first secretary of the Brookline Taxpayers Association. He had been a member of the Brookline Republican Town Committee for more than 20 years, serving until recently as treasurer.

"He was born in Charlestown, October 9, 1868, son of James Dana, then mayor of Charlestown, and the former Julia Hurd. Mr. Dana worked with the U. S. Geological Survey in California and later joined the faculty of M.I.T. Still later, he became a fire protection engineer for the Fire Underwriters Bureau of Boston, and served as manager of the bureau from 1903 until his retirement in 1929. He was a lecturer and the author of two volumes on fire protection."

"Long active in Brookline affairs, he served as a town meeting member from the start of the representative form of government until 1952. He also had served as chairman of the town improvement committee of the Brookline Civic League, as chairman of the Long Range Planning Committee, and as a member of the Post War Planning Committee.

"From the many testimonials I have received from the members of the Class, I quote but two. Ambrose Walker writes: 'Gorham Dana was a delightful man and near neighbor, and always working for the good of the Class of '91.' And Walter Douglass sends me this: 'Gorham was one of my closest friends in the Class, and he was one who through the years kept a continued interest in M.I.T. affairs. He was a prominent man in the town of Brookline.'"

And here is the story of the erection and dedication of the Dana Memorial, as it appeared in the *Boston Herald* on November 10, 1957: "Dana Room To Be Dedicated November 17—From the smallest cub scout to the senior deacons of Brookline's First Parish Unitarian Church, townspeople have a good reason to remember the interest shown in community affairs by Gorham Dana. Before his death at the age of 87 last year, Mr. Dana talked with the minister of the church, the Reverend Carl Bihldorff, architect William Stanley Parker, and Brookline's best engineers and electricians about a project close to his heart. The result was the Dana Room underneath Peirce Hall, Brookline's original meeting house dating from 1717, which will be dedicated on November 17.

"Brookline was granted an independent charter from Boston on the stipulation that its citizens could build their own town hall and church. Peirce Hall adjoins the First Parish Church, but it became a school and a dancing academy before the church bought it as a parish house in 1908.

"Mrs. Harrison G. Bridge heads the sponsors for the Dana Room dedication, which will be conducted by the Reverend Palfrey Perkin, minister emeritus of King's Chapel. Consommé will be served at the ceremony, which will follow 11 o'clock service on November 17.

"Friends of Mr. Dana, who knew him as colleagues on the Town Improvement Committee, the Brookline Boy Scouts, the Foreign Policy Association, the Bostonian Society, Horticultural Society, the Union Club, the Museum of Science, the Museum of Fine Arts, the Society for the Preservation of New England Antiquities, or as M.I.T. Alumni, knew of his wide interests. Now the whole town will share his interests in the memorial suite of rooms.

"Sponsors of the Dana Room, where a plaque honoring his sister, Mary, and his brother, James, hangs near a portrait of Gorham Dana, include . . ."

At the end of the clipping are the names of 12 persons, sponsors of the memorial, and following these are 25 "others who have helped to make the Dana gift a reality after his death."

What a large and wholesome life Gorham did have, and what an example for us who knew and loved him! — WILLIAM CHANNING BROWN, *Secretary*, 15 Forest Avenue, Hastings-on-Hudson, N. Y.

1892

The Secretary is saddened to have to report the death, on November 4, of another classmate, Mrs. Mary Lowell Barton. He is indebted to the *Boston Globe*

for the following account of her career.

"Mrs. Mary Lowell (Coolidge) Barton, 89, of 191 Commonwealth Avenue, Boston, died today after a long illness. The daughter of the late Dr. Algernon and Mary (Lowell) Coolidge, Mrs. Barton was born at the Lowells' summer home in Waltham. She attended Miss Hersey's School, Boston, and later studied at Massachusetts Institute of Technology.

"In 1898 she married Frederick Otis Barton of New York City, a cotton merchant. He died in 1904. Returning to Boston, Mrs. Barton lived with her sister, Ellen Coolidge, at 12 Fairfield Street, and summered at Cotuit for many years. She was a niece of the late Thomas Jefferson Coolidge, U. S. ambassador to France, and was a cousin of Mr. and Mrs. Lawrence Lowell. Mr. Lowell was a former Harvard president.

"Mrs. Barton leaves two sons, Otis of New York City and Francis L. Barton of Cambridge; a daughter, Mrs. Edward Churchill of Belmont; and six grandchildren." — CHARLES E. FULLER, *Secretary*, P. O. Box 144, Wellesley 81, Mass.

1894

The December notes mentioned several of the members of the Class from whom news had been recently received. The Secretary can now add a few notes regarding others who cannot be forgotten. Our numbers in the Boston district have now become so greatly reduced that there are but five of us left in the area: Lacount, Owen, Taylor, Schiertz, and the Secretary; and there are but a few others in New England. These are Beach at Rockport, Baker at East Templeton, Horton at Sandwich, Hunt at Portland, Kimball at New Britain, and those mentioned in recent notes.

One of our classmates whom we cannot forget is Ferdinand Schiertz, who graduated in Mining and spent much of his active life in Mexico and in China. In later years he became much impaired in health and suffered a considerable loss of eyesight, and he and his wife joined the Elizabeth Carleton House in Roxbury. Here he is still living; and as his wife died a few years ago, he is much cut off from the rest of the '94 survivors. A telephone call to the Carleton House today brought the information that he is fairly well and courageous, although nearing age 90, in spite of his handicaps. A letter from any classmate who remembers him would certainly be appreciated by Ferdy. The Secretary hopes to be able to visit him soon if his own infirmities permit.

Lacount is still living at 124 College Avenue, Somerville, retired, and active in good works. Owen is still active, and represents the Class on the Alumni Council. It may have been reported that during the past year his charming wife passed away after a long illness and much suffering.

A cheerful note from Beach told of the activities of the daughters of the family, and of the fine group of grandchildren of whom he is very proud. A card from George Sherman of Akron indicates that he is still reasonably well and not entirely retired.

The Secretary feels certain that all the

Class will be pleased to learn that Norwin Bean, among his generous bequests for charitable and educational institutions, especially in and about Manchester, left a bequest of \$50,000 to M.I.T. It is pleasing to report that Mrs. Bean is making a good recovery from the accident which befell her early in the year. — SAMUEL C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge 39, Mass.

1895

As your Secretary spent Christmas in the Community Memorial Hospital, Ayer, Mass., recuperating after a hip operation on November 2, The Review editors are again pinch-hitting for him.

The Class lost one of its most outstanding members on November 20 when Gerard Swope, VI, former President of the General Electric Company, died at his home, 161 East 79th Street. A resumé of the high lights of his career appears on page 147 of the January issue of The Review. He is survived by a daughter, Henrietta, who is an astronomer with the Mount Wilson Observatory in Pasadena, Calif.; three sons, David, John, and Gerard, Jr.; and a brother, Herbert Bayard Swope. Mrs. Swope died in 1955.

From an article in the Quincy, Mass., *Patriot-Ledger* of October 31 we learn that 40 per cent of the \$660,000 estate left by Archer E. Wheeler, whose death was recorded in these notes in July, 1956, is marked for M.I.T. The estate was left in the form of two trust funds, the income from which will go to Wheeler's widow and his sister until their deaths. Thereupon: "40 per cent of the fund will go to Massachusetts Institute of Technology to establish an undergraduate scholarship fund. . . ."

"Mr. Wheeler died on March 8, 1956, at the age of 87. A former director of the Montana Power Company, he had studied at M.I.T., and was considered an expert on copper. In 1941 he was made an honorary member of the Electrochemical Society." — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

1896

Marshall Leighton was not in his office when the Secretary called there during a visit to Washington in November. In answer to a phone call to his house, he said that he had retired from his firm and had spent the summer in Maine, having but recently returned. As soon as he can settle his affairs in Washington he intends to return to Portland permanently. Marshall has been a great aid in giving help to the writers of the class notes; and it is hoped that he will maintain contacts with Washington men of '96, so that he may send along items for the notes. We of the retired section welcome him to our section and trust he may find it as comfortable and restful as we do. Maybe there will be some word when he sends in his new address.

When Albert Ruckgaber acknowledged receiving the list of class members he wrote: "Like most of us, I am retired and occupy my time, after the daily chores of living and daily ritual of reading the newspapers, with boning up on the scien-

tific principles involved in television, so vastly different from the physics we studied at M.I.T."

As these notes are written, the failure of the moon rocket to ascend into outer space has been cited in the indictment of American education by the newspapers and others. Robert Herrick, after correcting papers on "Why I came to Tech," advised his freshman section to consult a catalogue of a college of liberal arts and sciences. Louis A. Freedman, after two years at Tech, attended college that gave him an A.B. degree. He writes: "The destructive and creative revolutions during the three score years after '96 have made our earth seem almost as different and strange as one of the planets in outer space we are preparing to visit. We survivors physically and mentally still belong to the human race we knew; and, in the chaotic interval between the new and what is to come, we are trying to discover what, if any, permanent values we can carry over into the future. This reflection will explain why my doings and travels mean less to me than the questions I am trying to answer. However, I am keeping my feet on whatever earth we have left; am working steadily to earn my daily bread and enough to contribute my little to M.I.T.; am keeping in touch with the events, even if they are beyond my control; am trying to help such of my fellow man as I meet; and, in general, am striving to put some kind of a numeral, however modest, before the zero. In parting, I hope our M.I.T. will continue eternally striving onward and upward, always remembering never to forget human values, human decency, human personality, human compassion are the foundations on which realistic and scientific values have ever to stand."

Charles Johnson was forced to retire from the Louisiana Highway Department when he was 82 in 1954 because a law was then passed requiring retirement at 70. His interest now is in United States geography and in modern poetry. Bakenhus has responded to the request in the November issue suggesting the New York Yacht Club as the place for a class meeting; let us hear from some more of the Class.

The following notice appeared in the *Boston Herald* on December 13: "Burlington, Vt., December 12 — Professor Elbridge C. Jacobs, 84, former state geologist and head of the Geology Department of the University of Vermont, died today. He established the seismograph station on the campus. He had been at the college from 1899 to 1944." — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline 46, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline 46, Mass.

1897

From the Alumni Association we have received two new addresses. Commander Frederick A. Hunnewell's address is 2122 Massachusetts Avenue N.W., Washington, D. C. This is otherwise known as the Cosmos Club, the membership of which is composed of distinguished individuals in many lines of endeavor — scientists, educators, engineers, men of letters, gov-

ernment officials — one might say the intelligentsia of our capital city. Their new clubhouse was the former beautiful residence of Mrs. Richard Townsend and, later, of her daughter, the late Mrs. Sumner Welles. They were the aunt and cousin, respectively, of our sister-in-law, so the relationship was not very close. The undersigned, however, did have the privilege, during a brief stay in Washington during World War II, of associate membership in the Cosmos Club; in fact, he lived in that high-brow atmosphere for a month or two, much to his benefit and pleasure.

The other change in address is that of Miss Helen E. Keep, Room 401, Royal Palm Hotel, 2305 Park Avenue, Detroit 1, Mich.

We had the good fortune to attend last fall two sessions of the Alumni Council. The first, on October 28, was addressed by H. Guyford Stever, Associate Dean of the School of Engineering, who described the close co-operation between Russian and American scientists and the widespread interchange of papers and documents between scientific and professional societies of the two countries. Notable was the detailed and reliable advance notice of the launching of the satellites and the frank and dependable information received.

At the Council meeting on November 25 Nicholas J. Grant, Professor of metallurgy, who had spent several weeks last summer in Russia, described the privileges he and Professor John Chipman, also of the Metallurgy Department, had received. These included visiting about wherever they pleased and the permission to take photographs wherever they went. Professor Grant concluded with the showing of numerous beautiful color photographs of their trip, which extended 1,500 miles or more east of Moscow. The pictures included interiors of steel mills as well as the iconista and altars of the churches within the Kremlin. Your Secretary was not too surprised to learn that outside the big cities the lack of paved roads and the prevailing deep mud was much the same as when he spent four months there over 40 years ago. The Council meetings are now attended by 125 members or more, and we are glad to go when possible and the weather is not unfavorable.

The late Charles W. Bradlee served for many years as the chairman of our Class Committee and performed the duties of his office with much loyalty and devotion. The following notice appeared in the *Boston Herald* of December 9: "North Chichester, N. H., December 8 — Mrs. Agnes Bradlee, daughter of the founder of Moller's Furniture Company of Cambridge, Mass., died today in Concord Hospital. She had made her home here with a sister, Mrs. H. Grafton McKenney, for the past 12 years. She was the widow of Charles W. Bradlee, a Boston heating and ventilating engineer.

"Before moving to New Hampshire, Mrs. Bradlee was active in civic affairs in Weston, Mass., and had been a member of church groups at the First Congregational Church in Pittsfield.

"She leaves another sister, Mrs. Griffith T. Ellis of Arcadia, Calif., and a brother, Edwin Moller of Reading, Mass.

Services will be Tuesday in Pittsfield First Congregational Church at 2:00 P.M. and Wednesday in Story Chapel, Mt. Auburn Cemetery, Cambridge, at 2:00 P.M."

The previous week the wife of Edgar M. Hawkins, the latter a devoted member of our Class, died in her 87th year after a long illness. The following notice appeared in the local press: "Hingham, December 6 — Mrs. Nana Pratt Hawkins, 86, of 14 Stoddard Road, died here yesterday.

"Born at Fort Sill, Indian Territory, she was a daughter of Brigadier General Richard H. Hawkins, famed frontier soldier and founder of the Carlisle Indian Institute in Pennsylvania.

"She leaves her husband, Edgar M.; a daughter, Mrs. S. Clark Seelye of Hingham; and two sons, Richard P. of Hingham and Edgar M., Jr., of Coldwater, Mich."

Unless the class survivors send in some news to your Secretary, these notes will consist principally of a continuing series of obituaries. Please wake up and become articulate. — JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1898

Through the kindness of Winifred R. Sibley, Class Notes editor, there was a note in the column reserved for '98 notes in the January issue of *The Review*, explaining why the Secretary was unable to prepare class notes for that issue of *The Review*.

The convention was the 36th National Convention of the American Association of Textile Chemists and Colorists, A.A.T.C.C. for short, which was held at the Hotel Statler in Boston, November 14 to 16, 1957. M.I.T. was well represented among the officials of the convention. The general chairman was Ernest R. Kaswell'39. Subcommittee chairmen were Azel W. Mack'15 — Finance; Edward S. Chapin'98 — Ladies' Committee; Thorwald Larson'28 — Printing; and Dr. J. Edward Lynn'37 — Technical Program. Albert E. Sampson'15 presided at a greatly enjoyed glee club and band concert. Dr. Walter J. Hamburger'21 presented a notable paper at one of the symposia.

You may ask how the Secretary, retired from active business, came to co-operate with this younger group. Well, the story is like this. The Secretary served in the preceding conventions at Boston in 1946 and 1952 as chairman of Reception. There is a quotation, *n'est-ce pas*, to the effect that one's deeds follow him? At any rate, we were asked to head up the Ladies' Committee of this, the 1957 convention. In addition to the tours mentioned in the January Review note, there was a tour arranged to historic Lexington and Concord.

At the final banquet of the convention, honoring charter members, your Secretary was presented a Charter Member Certificate by the national president, Mr. George O. Linberg. This is a handsomely engraved certificate with various laudatory remarks. While we do not know what we have done to deserve the award, we did not refuse the certificate, of which we are reasonably proud.

We have made it a policy, as far as pos-

sible, to exclude personal doings of the Secretary from the class notes. You will, gentle reader, I am sure, bear with a narration of what happened on October 22, 1957, my 80th birthday. My sister, Marion, and our classmate, George Cottle, arranged in advance a surprise party. When my sister and I arrived at the Algonquin Club, as I supposed, to dine with George *à trois*, there was a smiling group—George and his sisters, Mrs. Jean Blanchard, and Miles Sherrill '99,—all told, a party of eight! Was I surprised and delighted! We had dinner in the spacious dining hall, well known to those who attended the 50th. As if this were not enough, in the midst of the dinner, an attendant came to the table and announced that Mr. Chapin was wanted on the telephone. When I reached the apparatus, the voice that greeted me was my daughter's, telephoning from London, England. I could hear her and her husband, Professor Furber, who also talked to me, as clearly as if they were right beside me. (The Furbers are in Europe for a sabbatical. It will be remembered that they both attended the 50th and 55th.) Marvels of trans-Atlantic telephony! Was I delighted and moved! And also somewhat dazed. You see, earlier in the day, I had opened a package from the Furbers, containing various airplane time tables and tourist leaflets, a certificate good for a round-trip ticket to any desired airport in Europe, and a letter advising that the Furbers would meet my sister and myself next summer in their new small European car for a trip through Denmark, Sweden, Norway, Finland and Germany. The Scandinavian countries were chosen because my sister and I have traveled time and again through other countries of Europe (Russia excepted) but never, as yet, through the Scandinavian countries. It had to be next summer; for, of course, the Furbers knew that we would not think of leaving for Europe until after the 60th reunion of the Class.

And speaking of the 60th, what an event this should be: reunion, get-together, fiesta or what not! You received a letter from President Edgerly in October '57, with a proposed outline of the 60th. When he came East in late November for Thanksgiving, he foregathered with George Cottle and the Secretary to discuss the subject further. Many classmates have indicated their intention of coming to the 60th. Their cards and letters were included in the November '57 notes. There are 90 plus on our class roster; and then, most importantly, there are the wives and relatives of living classmates and of those who have passed on.

Those who attend the 60th would be a privileged group, to whom the remarkable buildings and installations of M.I.T. would be wide open. Then, too, there are all sorts of tours, in and about historic Boston, Cambridge, Lexington, and Concord, that could be readily arranged. Put on your little old thinking cap and write us what you would *really* like to do. However, although we have exceeded the years mentioned by the Psalmist, "which by reason of strength are four-score," be prudent in your suggestions.

You may have seen the article in the *Readers' Digest* of November, '57, "Rais-

ing Chickens Becomes Big Business," which was condensed from the *Wall Street Journal*. Our classmate, Maurice F. Delano, was a pioneer in the industry. However, Del specialized on high-grade stock. Looking over his catalogue, *Owen Farms*, we remarked, "Fifty dollars for a rooster," one of Del's early deals. "That's nothing," he replied, "I sold one cock for \$1,000.00. What's more," he continued, "I refused \$1,000 for another cock, and in the next three years sold \$37,000 worth of his progeny." (These were dollars of 50 odd years ago; so multiply the figures at least by three!)

But let Del tell his own story. We quote in part from the catalogue: "In 1889, when I was 14 years old . . . my father bought for me my first thoroughbred chickens, Light Brahmas. . . . The following year, I paid \$50.00 for a Black Langshan bird. . . . From that day it has been my ambition to breed the best birds in existence in my varieties. From 1889 to 1894 I showed very successfully at a number of New England shows and had worked up a real business. . . . That year I disposed of most of my chickens to enter the Massachusetts Institute of Technology. My technical course did not cure my preference for the poultry business, and in 1898 when I finished at Tech [Del graduated in Course I], I went back into the poultry business; it has been my life work since that time."

He came to the Owen Farms of Vineyard Haven, Mass., as manager in August, 1905; and in April, 1913, purchased, outright, the Owen Farms, flocks, business, and goodwill.

The catalogue is a booklet of 56 pages, 12 inches by 8 inches, profusely illustrated. Not only are there pictures of our classmate, his associates, farms, and office, but also almost innumerable pictures of handsome poultry of many varieties, singly and in groups, and among them many prize winners. Then, too, there is the accompanying descriptive matter.

We quote a few random facts, jotted down in the course of conversations with Del about the business. "18,000 customers. . . . Less than 10 per cent who did not send repeat orders. . . . One customer, \$24,000 in three years. . . . Another paid \$10,000 for 96 chickens. . . . Shipped to 27 foreign countries." And listen to this: "In 1922-3, the Japanese Secretary of Agriculture, a graduate of the University of Michigan, took home with him samples of poultry from several poultry farms. The Delano birds outlaid, outlived and out-hatched them all; and thereafter they would buy only from Delano, making an eight-year contract for 28 birds a year, at a price of \$800.00 per year."

Is it any wonder that our classmate became secretary and president of numerous poultry associations; and was much sought after as judge at poultry shows? A year ago, he came to Boston to act as judge at the 109th Poultry Show, held January 24 to 26 in the Mechanics Building. We watched him with interest as he judged several handsome birds; and it was with manifest affection that he stroked the birds, all in the judging.

Del has been retired for several years. He lives with his daughter, a graduate of Wellesley, and her husband, head of the

Graduate School of Temple College, Philadelphia, Pa., at their home in Blakely Road, Haverford, Pa. There are two grandchildren, a girl and a boy, of whom it is needless to say he is very fond. Del has a comfortable apartment to himself at one end of the home; and he is very happy. He would be very glad to welcome any M.I.T. classmates and expand this account of his career.

Mrs. Ruth H. Gray, daughter of Heber A. Hopkins, telephoned us on Monday, November 5, and startled us by announcing that her father had passed on in his sleep. This energetic '98 classmate was a great huntsman, and the very day before his passing had looked over his guns and his dogs in preparation for a hunting trip through the woods. He must have had a heart attack during the night and passed on peacefully. Joe Riley and the Secretary represented '98 at the services, which were held on Tuesday, November 6, at the Folsom Funeral Chapel in Roslindale, Mass.

Dan Edgerly has sent us the following from the *Chicago Tribune* of November 19 concerning Homer Sargent: "Services for Homer Earl Sargent, 82, of Pasadena, Calif., former Chicagoan who for many years was a consultant engineer for Westinghouse Electric Company, will be held tomorrow morning in Pasadena. Mr. Sargent died last Friday, November 15, in Pasadena. He was a member of the University Club of Chicago and a life member of the Art Institute of Chicago and the Chicago Natural History Museum. He presented his extensive collection of Indian items, accumulated over 50 years, to the museum. He was the youngest brother of the late John R. W. Sargent, retired grain merchant who died in 1954. Two nieces and five nephews survive."

A more personal note comes from Dave Fenner, a classmate of Homer at Yale-Sheffield Scientific School, and we quote in part from his letter: "You may recall that Brud Sargent and I came to Technology on Boylston Street in the fall of 1896, managed to pass off the first two years, and joined that wonderful Class of Eighteen Hundred and Ninety-Eight. We roomed together at 88 Huntington Avenue. We both attended our 60th reunion at New Haven in June, 1956, and I am going to miss a very dear friend."

Through the courtesy of Bob Lacy, we have received the following concerning Ray Faught, a clipping from the *Baltimore Sun* of November 22, 1957: "R. C. Faught Dies at 82. Retired Electrical Engineer, Long On G. E. Staff. Funeral services will be held at 2 o'clock this afternoon at the First Unitarian Church for Ray Clinton Faught, retired electrical engineer, who died Wednesday. He was 82. A native of Maine and a graduate of the Massachusetts Institute of Technology, he had lived in Baltimore for 49 years, a period just slightly longer than his career with the General Electric Company. Mr. Faught graduated from M.I.T. in 1898 and joined the General Electric staff the same year. He came to Baltimore in 1908, the same year he married the former Miss Elizabeth Mackie, of Richmond, Va. He was a member of the American Institute of Electrical Engineers, the Engineers' Club of Baltimore,

the Elfun Society, and the Twentieth Century Club. Mr. Faught lived at 201 Athol Gate Lane in Ten Hills. He is survived by his wife; one son, Ray C. Faught, Jr., of Schenectady, N. Y.; and three grandsons."

We are deeply grateful to those classmates who are thoughtful enough to send us information concerning members of the Class. — EDWARD S. CHAPIN, *Secretary*, The Eliot, 370 Commonwealth Avenue, Boston 15, Mass.

1899

George P. Dike, long located at 73 Tremont Street, Boston, has moved his offices to much roomier quarters at 24 School Street. The firm name is now Dike, Thompson, Sanborn, and Bronstein.

The above item is the only class news to reach my desk this month. Is it modesty or apathy that keeps you from sending me information about yourself that I can use in the class notes? If this reticence continues, I shall be compelled to disclose some of your escapades while you were an undergraduate. Just as an example: Classmate A invited Classmate B, a commuter, to stay overnight with him at his rooming house on St. Botolph Street in order to go over some homework together. Classmate C, who had a room on the same floor, was spending that particular evening being initiated into the chemical society known as the K2S. Classmates A and B decided that C would not have had enough excitement at his initiation, so proceeded to fix up his room for a second initiation. A glove full of cold, wet sand and some pebbles were put in his bed. A pillow was placed inside a housecoat and a clothesline was run through the sleeves and fastened to the bedstead and bureau at chest height. And then a pillow was balanced on top of the door, which was left open. Finally the hall light was turned out.

When Classmate C came in, somewhat dazed and tired, he first was hit on the head by the pillow when he pushed his door open. Then, as he advanced into the room, he ran into something that was the size and shape of a man. He made some sulfurous remarks that were mild compared with what he said when he crawled into bed. The next morning his landlady requested him to seek other quarters if he could not be more quiet when he came home late.

The above is mild compared with what can be dug up with names given. So suppose you fellows come across with some real news items. If you can't, send in some of your "escapades." — BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass.

1900

We have received word of the death of Mrs. Marion (Cade) Woodman on November 14 at her home in Watertown, Mass. She was the wife of Dr. Alpheus G. Woodman, professor emeritus of chemistry at M.I.T. She herself graduated from the Institute with us from the Chemistry Course. She leaves a daughter, Mrs. Louise W. Ottaway of Wellesley Hills; and a son, W. C. Woodman of Watertown.

Last summer we had a note from Henry B. Bigelow saying that he retired in June, 1950, as professor of zoology, emeritus, and as Alexander Agassiz Professor, Harvard University, but is still actively occupied in researches on fish in the Museum of Comparative Zoology. We also had a note from Llewellyn Cayvan, Grand Rapids, Mich., as follows: "Have been retired from the biscuit and cracker business two and one-fourth years (at age 75 it happened). But I do have considerable chamber music teaching to do for the students in the Music Department of Calvin College (a denominational college of about 1,500 students) about four times a week. Also a very little teaching of stringed instruments and a very limited number of public appearances on cello. Also have lectured a little in the college on musicological subjects. In other words just keep busy 'enuf' to enjoy life. Am married the third time to one of four ministers in our Congregational Church, so you see as a young feller I have to behave myself. I go, for all summer, up to our little place on the south shore of Torch Lake, a big lake 18 miles long. Magnificent sailing. I have found the secret of 'staying young': (1) have plenty of contacts with boys and girls between the ages of 18 and 23; (2) have a hobby and DRIVE IT HARD. (I have two: music in winter and boats in summer.)" — ELBERT G. ALLEN, 11 Richfield Road, West Newton, Massachusetts.

1902

There have been several deaths among our classmates: Robert V. Blaisdell, Paul R. Dickson, and John M. Egan, Jr. Blaisdell died May 27, 1957, at Coeymans, N. Y. Although born in St. Louis on July 4, 1878, he had lived most of his life in Coeymans, carrying on a farm which was a part of the ancestral acres of his forefathers. At the Institute he was enrolled in the Course in Architecture but had to quit on account of his health; he took up ranching in Wyoming. Upon the death of his father a few years later, he sold his ranch and returned East to assume control of his father's farm at Coeymans. To quote from a letter from his son, Thomas: "He renovated the old home, bought an adjoining farm and a fine herd of Jersey cattle, and settled down to a very busy life as a practical farmer. He served for many years as a member of the town board, justice of peace, and member of the school board. During the past 10 years his health steadily declined to the point of confining him much of the time to the house. He became tremendously interested in the history of the area and turned out a number of very interesting brochures on families, buildings, roads, and so forth of this section, carrying on most of this work through correspondence with others of similar interests. His death closes forever an almost inexhaustible source of such information. My father always had a keen interest in M.I.T. and was an avid reader of the Technology Review, most copies of which he turned over to me."

Blaisdell married Marguerite V. Briggs of Coeymans and they had three sons: Anthony, John, and Thomas. Anthony of Coeymans and Thomas H. Blaisdell of

South Westerlo survive him. John was killed in an accident.

Dickson, XIII, died November 4, 1957, at the Mount Auburn Hospital after a long illness. He was a native of Cambridge, where he was born January 8, 1878. He resided in nearby Belmont at the time of his death. He followed naval architecture throughout his career, getting practical experience in his first year or two working for the Union Iron Works in San Francisco in outside work of all kinds in the line of construction. He later became employed in the U. S. Navy with the rating of carpenter, and was stationed at the Cavite Naval Station, Philippines. In that capacity he was detailed to write up specifications and test all articles bought by the government in the Construction and Repair Department. During this period he visited China and Japan for a month; he was later to do more travel in China. After two years as carpenter he resigned; but he returned to employment in the Navy as outside foreman in the Construction and Repair Department, U. S. Naval Station, Olongopo, Philippine Islands. While here he shuttled between Olongopo and Cavite, and during this period assisted in raising the Dry Dock Dewey; he took part, with the help of Filipinos and Chinese labor, in breaking all records of docking and making repairs to the underwater body of eight cruisers that visited the East at that time.

In 1912 Dickson returned to Boston and employment in the Boston Naval Shipyard. He remained there until his retirement in 1943, at which time he was a senior naval architect. He is survived by his wife, Mrs. Claire (Rand) Dickson; two daughters, Mrs. Robert B. Kinraide of Westwood and Miss Margaret Dickson of Belmont; and two sisters, Mrs. Lester W. Ladd of Belmont and Mrs. Chester Arthur Legg of Illinois.

John M. Egan passed away in Largo, Fla., September 30, 1957. Our class records show that he was with us during the freshman year and then left and was for several years engaged in civil engineering and construction in Georgia and Alabama. Later he returned to Indiana and Illinois and built up his own business in general engineering and construction.

To close on a more cheerful note — In the November 7 issue of the *Queen Anne's Record-Observer* sent us by Grant Taylor, we see the shining face of Bill Kellogg as, in the capacity of senior warden, he accepts the key to the new parish house for the Old Wye Church at Wye Mills, Md., which dates back to 1694. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

1903

We note that J. Howard Pew, II, until recently president of the Sun Oil Co., Philadelphia, Pa., is now a director of that company. Howard has always been a loyal supporter of the Class; his company is fortunate in being able to retain his services. J. Tyrrell Cheney's address is now Ridgefield Road, Wilton, Conn.; we would like to hear more from him. Notice of the death of Everett H. King, V, of Tewksbury, Mass., has been received, but with no particulars as yet.

Hewitt Crosby, 2531 Milmar Drive, Sarasota, Fla., is keeping busy in spite of retirement and has contacted several classmates in the area. He was deeply saddened recently by the news of the death of his roommate at M.I.T. Justin E. Harlow, who, in token of his esteem, had named one of his children "Hewitt Crosby." Truly, student association frequently results in lifelong friendships.

In further detail, Justin E. Harlow, Jr., writes that his father went to sea, after graduation, as third engineer on a merchant vessel plying between Baltimore and London. After several trips he gave up the seafaring life and engaged in the phosphate and kaolin industries in Melbourne and Okahlumpka, Fla. In 1906 he married Ethel May Harlow of Cambridge, Mass. and resided in Baltimore, Md., later moving to Port Deposit, Md., where he was engineer at the Jacob Tome Institute (now Bainbridge). In 1910 he became chief engineer of the Northern Utilities Co. of Illinois, living at Dixon, Ill. In 1917 he undertook a power plant construction job for a public utility in Tulsa, Okla., and did similar work in Galveston and Houston, Texas. In 1918 he became chief engineer of the Clinton Iowa Sugar Refining Co. and in 1920 took a similar position with the M. H. Detrich Co., manufacturers of boiler equipment. During 1925 he was with the Fyrc Spark Plug Co. in Rockford, Ill. In 1926 he was appointed safety engineer for the Duquesne Light Co. in Pittsburgh, Pa. In 1928 he went into consulting engineering work in Cincinnati, Ohio, traveling extensively until his retirement in 1949. He was a fellow of the American Society of Mechanical Engineers, a 32nd degree Mason, and a 50-year member of Corinthian Lodge, A.F. and A.M., in Baltimore, Md.

He had four children: Justin E., Jr., now associate professor of psychology at the University of Florida; Mrs. Horace B. Mitchell of Jenkintown, Pa.; Roger, chief of communications of a division of the Erie Railroad at Marion, Ohio; and Hewitt Crosby, a partner in the Malvern Minerals Co. in Hot Springs, Ark. His first wife died in 1920. He later married Wilhelmina Viola, who survives him, as do his four children; eleven grandchildren; and a sister, Miss Alice Harlow of Philadelphia, Pa. He was born March 4, 1880, at Bellevue, Pa., the son of James Hayward Harlow and Theresa Alice Butler. His elementary schooling was in the Manchester district of Pittsburgh, and he graduated from Pittsburgh Central High School in 1899. He spent his retirement years at Hertel, Wis., where he previously had a summer home. He became interested in the work of the Methodist Church in nearby Siren, Wis., and was a lay speaker in that church until his death, which occurred October 9, 1957, the burial taking place at Siren, Wis.

George E. Sibbett, II, has recently resigned as president of the Allen-Fry Steel Company of Los Angeles and is now living at 61 Lagunita Street, Laguna Beach, Calif. Our Southern California group is increasing; how about getting together and making plans to attend our 55th reunion?—F. A. EUSTIS, *Treasurer*, 131 State Street, Boston 9, Mass. LEROY B.

GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass.

1904

The flow of class news which had shrunk to a trickle has now dried up completely. Christmas will be long in the past by the time you read these notes, so all we can do is to express the hope that you enjoyed the festivities of the holiday season and extend best wishes for 1958. Even though the new year is well started, it is not too late to make a resolution to supply some news items for this column.

—EUGENE H. RUSSELL, JR., *Treasurer*, 82 Devonshire Street, Boston 9, Mass. CARLE R. HAYWARD, *President and Acting Secretary*, Room 35-304, M.I.T., Cambridge, Mass.

1905

Our experience with reunions over the last few years justifies the use of the word whenever three or four of the Class get together. Therefore, there was another reunion (or class meeting) at the Faculty Club on November 29, 1957. It actually was Ladies' Night, since the ladies outnumbered the men. Present were Hub Kenway; Grove and Helen Marcy; Len and Bernice Cronkhite; Prince and Ethel Crowell; and Gib and Elizabeth Tower, who were accompanied by their daughter-in-law, Mrs. Daniel Tower of Providence. Accompanying Ruth and me was our daughter, Lucy, of Springfield, Mass. After a delicious lobster dinner, President Kenway called the meeting to order and presented the speaker of the evening, Mr. Leonard W. Cronkhite, Vice-president of Baird-Atomic, Inc., of Cambridge, Mass. Len's talk was an amplification of the story given in these notes in November. It was a very informal and interesting story and enjoyed by all.

Opportunity for holding the meeting at the Faculty Club was arranged by Doc Lewis, who unfortunately was unable to be present due to a chronic asthmatic condition, which limits his evening activities. A clipping from *Tech Talk* dated November 5, 1957, tells this interesting story of Doc: "When Professor Warren (Doc) Lewis receives next Monday the Gold Medal for Distinguished Achievement from the American Petroleum Institute, he'll have to make a brief speech which, if it is up to M.I.T. standard, will be as peppery as it is incisive. A graduate of M.I.T. in 1905, Doc's teaching abilities are a matter of legend to more than 40 classes of chemical engineering students. Quaking from his famed lack of pampering protocol, they have gone out from M.I.T. to take top engineering posts all over the country—never forgetting the most important lesson of the tireless, mobile-faced man who started them off: to think for themselves or suffer a variety of stormy consequences. For Professor Lewis, once characterized as a 'would-be farmer who got sidetracked into teaching,' the medal is only one in a long stream of top scientific honors. But it is not awards that count most with Professor Lewis. 'The only thing I have done is to train students,' he says emphatically. 'This petroleum business was strictly a co-op-

erative effort. I didn't invent anything new. I only helped young engineers to apply new processes to the industry.' There is little evidence of Professor Lewis' achievements in his office. But over in a corner hangs a plaque with a small, scarlet fish in the middle. '1954,' it says at the top in large gold letters, 'Award of Harengus Rubrus.' The honor came from a local group of engineers who get together on Fridays for informal lunch and discussion. Fish being the chief dish on the menu, they call themselves 'The Ichthyologists.' To Professor Lewis: the 1954 Award of the Red Herring." I wish we could reproduce the picture of Doc, so you could see what the "mobile-faced man" of today looks like.

Through Aaron A. Loomis' 36 I have received further information as to the life story of his father, Warren W., whose death has previously been reported here. I quote: "Dad was born in Lakewood, N. J., in 1878. After high school he went to work in one of his father's lumber mills in North Carolina, but soon decided to return to school. In the fall of 1900, Dad entered Brown University, and transferred to M.I.T. a year later. He graduated from the Institute in 1905, with a Course VI degree. He went to work for Stone and Webster after graduation, near and in the Boston office. In 1906, he was sent to Dallas, Texas, as purchasing agent, and he acted for a time as traffic superintendent of the electric railway there. In 1911, he was recalled to the Boston purchasing department. Five years later, he was advanced from assistant to general purchasing agent, and filled that position for 16 years. Later on, in 1934, Dad accepted a bid from Mayor Mansfield of Boston to try to put the city's supply department on a business basis. Still later, Dad became purchasing agent for the Christian Science Publishing Society in Boston. He retired from active business in 1942. Dad had always been active in civic affairs in Needham, where he lived most of his life after marriage. He was active in his Masonic Lodge, in School Committee work, in Boy and Girl Scout work. He was a director and vice-president of the Needham National Bank." Aaron also tells me that our Charlie Boggs gave him his first job, fresh out of M.I.T., with Simplex Wire and Cable Co. He is still employed there.

Arthur E. Russell, XIII, is permanently retired, living at 301 N. E. 62nd Street, Miami, Fla. Art reports that he enjoys good health, but ducks our New England climate, except for a couple of summer months. Our representation at the monthly meeting of the M.I.T. Boston Luncheon Club still keeps steady. Babcock, Buff, and Fisher attended the November meeting.

Alden Merrill, V, passed away in Buffalo, N. Y., on November 24, 1957, after a long and incapacitating illness. After graduation Alden at once took a position with American Brass at Torrington, Conn.; he was transferred to their Buffalo plant in 1918, where he remained until retirement about five years ago as chief metallurgist. He was a direct descendant of John Alden, one of the Pilgrims who settled Plymouth. He was a member of the First Presbyterian Church of Buffalo

and a former deacon of that church. I knew (and appreciated) Alden Merrill very much, as he and I spent a full summer together as councilors at a boys' camp in Maine. Bill Spalding and Alden were neighbors for many years in Buffalo, and during Alden's illness Bill has kept us in touch with the situation. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. GILBERT S. TOWER, *Assistant Secretary*, 35 North Main Street, Cohasset, Mass.

1906

In concluding the class notes a year ago I raved about the typical New England winter scene we were enjoying then. This year is different — no snow yet and very little frost — but that is typical, too. News is meagre — no deaths to report for which we are duly thankful, and only one change of address: Anthony Mathesius, II, from Woodstock, Vt., to 40 Hundley Court, Stamford, Conn. Sherley Newton, V, telephoned recently to say that he and Pearl would not be going to Florida this winter, the reason being that they have acquired a summer place at Moody Point on the Maine coast. That was in June on the way back from Montreal, where Sherley had been chemist for 33 years for the Sherwin-Williams affiliate there and the Canada Paint Co. During that visit he attended a meeting of the club of which he had been president and of which he was made an honorary member — a nationwide group of about 20 such clubs, the Paint and Varnish Club. Sherley is a more or less rare example of the Tech man whose entire business life has been with one company and in his chosen profession — first in Cleveland, then Chicago and Newark, and in Montreal until his retirement in 1946. They have one daughter, married and living in Pittsburgh, where her husband is with Westinghouse; and two grandchildren.

Another telephone visit was with Andrew Kerr, VII, who, you may recall, was last reported in the hospital recovering from a heart attack. Andy has been back home in Plymouth for some months in the care of his good wife and says he is near normal again, with the usual limitations — and most of us have some now, of one kind or another. Plymouth is apparently somewhat disturbed over the *Mayflower II* situation and the difficulties that Plimouth Plantation, Inc., is encountering.

While doing the shops at Chestnut Hill with Marion early in December we had a brief chat with The Traveling Hoefers, who had just returned from a *seven months'* trip around the world; and Chester allowed he would send in their itinerary and some of the high lights of what must have been a memorable tour. Look for his report next month.

In November came a note from Harry Lewenberg, X. The latter part of November, 1956, they had moved from Brookline to one of those all-on-one-floor new houses in Natick. During the early years Harry had moved around considerably trying to find an outlet for his talents, energy, and ambition — first with the Burgess Sulphite Fibre Co., later the well-known Brown Co., way up in Berlin, N. H., then to N.Y.C. with the C. E.

Sholes Co.; he continued his professional career at the University of Illinois with other chemists in a research project on the effect of a special method of curing meats. Then Harry cut loose from chemistry and at various times was with the Standard Steel Car Co. in their Butler, Pa., plant; the Pressed Steel Car Co. at McKees Rocks, Pa.; and later with the St. Louis Car Co., to which he returned after a brief period with Bethlehem Shipbuilding at the Fore River plant in Quincy, Mass., during World War I. Wishing to contribute further to the war effort, Harry corresponded with Bernard Baruch, then head of the War Industries Board, and joined the staff as special statistical expert, Division of Planning and Statistics, in Washington. After the armistice he was retained, with some 60 or 70 others, to compile a *History of the Effect of War on Prices*, or some such work, he says, and did produce two bulletins on *Mineral Acids* and *Heavy Chemicals*, adding: "When I wrote those bulletins I had the opportunity of learning how little of real English composition I had acquired at the Institute."

Having been dissuaded by Professor Walker (William H.) from continuing in government service, Harry joined two former associates on the War Industries Board in their new company, Graphic Service Corp., New York, as vice-president in charge of the Boston office, "designing graphic charts for any and every purpose." Among their clients was the National Association of Wool Manufacturers; numerous statistical and graphic chart studies were made for them in connection with the Fordney-McCumber Tariff Act of the early 'twenties. The field was limited, however, and Harry expanded by developing a series of Medico-Actuarial Mortality Charts which he has continued on his own through the years since then, selling them by mail to life insurance companies in some 60 countries. From '31 to '34 the Graphic Chart Service published a monthly Graphic Chart Portfolio of stock market leaders, "without financial advice, prediction, or comment," and after struggling through the depression years was dissolved in 1934. For a period thereafter Harry was managing partner in the firm of Greb, Newel, Murray and Veek in Boston, exclusive distributors for foreign manufacturers, and in recent years was with Stone and Webster, retiring in 1953. In 1925 he married Miss Fannette Poppelhower of Boston, "well-known in Boston's world of fashion as Miss Fannette with her trips to Paris, her original creations, and her outstanding charm." Back in '36 when Harry sent to Jim his contribution for the contemplated history, *Thirty Years After*, he concluded it thiswise: "Together we have had happiness and vicissitudes, but she has given me the inspiration that brings always added courage, renewed hope, and faith. In sunshine or in shadow, life is a most fascinating existence; we can make much or little of it. We can find the happiness, the humor, the friendships; all these and more if we but make the reasonable effort." How true it is!

At this writing your Secretary is woefully behind in his correspondence but hopes by the time you read these notes he

will be caught up. He does enjoy being on the receiving end; so have a heart, and make a note about Alumni Day on June 16, if you are contemplating a trip in the direction of Cambridge. If not, why not? — EDWARD B. ROWE, *Secretary-Treasurer*, 11 Cushing Road, Wellesley Hills 81, Mass.

1907

After many years of almost complete silence as to his doings, Emerson Packard, one of the most active and prominent men of our Class during our undergraduate days, wrote to me last November a letter which I quote almost in its entirety: "As you undoubtedly know, I worked for the Koppers Company as their representative in Maine in 1930, and qualified as a registered professional engineer in Maine in 1936. In 1941 when the war broke out the entire force of the Koppers Company, which also included me, was fired; I returned to Massachusetts, where I entered the employ of the government in the Office of Price Administration, and that is the last time that we were personally in contact."

"At the end of the war the Office of Price Administration was, of course, disbanded, and I thought that I had retired; but when the Northeastern Gas Transmission Company decided to bring natural gas to New England, they dug me out and wanted me to purchase right of way for them. This I did until 1953, when I again thought I had retired. About six months after that, the Pine Tree Natural Gas Company conceived the idea of bringing natural gas into the state of Maine as far east as Lewiston and Augusta; I was again disturbed from my slumbers, this time to purchase the right of way for the pipeline, and afterwards to become chief engineer of the company. This concern had everything in the world that they needed except money, so it folded up."

"I again thought that I had retired, and this time it lasted until 1955, when the Connecticut Light and Power Company conceived the idea of building a \$27,000,000 dam across the river at Enfield, Conn., and backing up the water all the way from that point to Holyoke about five feet above its natural level; the resulting flow was to be used to generate electric power in an enormous plant to be constructed at Enfield in order to take care of the constantly increasing load caused by the record expansion of munitions plants in the state of Connecticut, where the Connecticut Light and Power Company has practically a monopoly of the power business. This necessitated a foot by foot study of both sides of the Connecticut River from Enfield, Conn., to Holyoke, and also as far up as each and every tributary would be affected by the raise in water level. It was necessary to determine just to what point on each separate property owner's land the raise in water level would reach, and just what effect — physical, mental, and financial — this raise in water level would have. There being some 1,100 property owners affected, you can easily see that this was some job which I had to carry through alone."

"This job was completed in June, 1956,

and I was again sure that I had retired. Just four days after I returned to Melrose for my retirement, I was waked up again by the firm with whom I am at present connected, Gordon E. Ainsworth and Associates of South Deerfield, Mass. This firm is engaged in purchasing rights of way to the extent of about 200 miles to take care of the distribution of electric power, generated in Massena, N. Y., by the St. Lawrence Seaway, which power is all to be used within the state of Vermont. Since that date I have been actively engaged in this, and will be, probably, for the greater part of another year.

"Beginning last May I brought Mrs. Packard up to Vermont, and we stayed in Woodstock, Vt., where I have an office, until the first of October; then we moved to Rutland, where we shall probably be located for the greater part of the time that I shall be in Vermont. After that I shall probably retire again. We have closed our house at 94 Morgan Street in Melrose, Mass., and it will remain closed until we return to that city. I, as well as you, often look back upon the associations that we had not long after the turn of the century, and think that we had a pretty good time then under the circumstances."

On November 21 I received a gracious note from Phelps Swett in Middlebury, Vt., referring to my own class activities, and continuing as follows: "Carl Bragdon and his wife were in Middlebury in October and he gave me a firsthand account of the Oyster Harbors and Commencement meetings of last June. . . . The latter part of last June I met Tom Gould on the street in Boothbay Harbor, Maine, and he also told me of those meetings at which he was present. Both Tom and Carl, as well as myself, ran on the relay class team as sophomores at Tech when we met the freshmen on Field Day. I am glad to know that our Class plans to meet again on the Cape from June 12 to 14, 1959, and I think it is a safe bet that I will be present — and would like the privilege of bringing a guest who will also drive my auto for me."

Late in November a most welcome letter came to me from Charles A. (Chick) Eaton, whose permanent mailing address is 345 North Georgia Avenue, P. O. Box 26, Atlantic City, N. J., but whose address at the time you are reading these notes will be Craig Key, Florida. Chick wrote at some length about a coronary occlusion that he suffered during the earlier part of 1957, and then continued: "At the present time I am pretty well recovered, but it takes time for physical tolerance to be re-established. Full tolerance never is re-established, but recovery can usually be to such an extent that one can play golf, do repairs around the house, do office work, and go out on inspections, which is about where I am today. The above is quite a dissertation on coronary occlusions which you may, or may not, be interested in. I am particularly interested in this weakness of the American people since I believe that 90 per cent of it is unnecessary. 80 per cent of the inhabitants of the earth have a serum cholesterol level of less than 150 and this 80 per cent seldom suffer from coronary occlusions. This is mostly a matter of diet, as the 80 per cent

referred to live on rice, soy beans and a little fish, or the equivalent, while we, in the Americas, live on the fat of the land.

"In February, 1956, I sold my Eastern Engineering Company hydraulic dredges, construction equipment, and machine shop equipment; I have since been interested in building construction through a new company, together with some general construction, through still another company. However, I am keeping to this work with occasional job inspections and do not participate in the actual conduct of the work. I have also begun to spend about five months in Florida every winter. In 1955 I had a house built on a key known as Craig Key, which is about one-third of the way down the Florida Keys. I had built this house on an island I had built artificially, in a location which is considered especially invulnerable to damage from tropical hurricanes and accessible by boat, both to the Gulf Stream and Florida Bay. I found the temperature and general weather conditions far more uniform in the Florida Keys than at any point on the Florida peninsula, and recommend any of our classmates who are considering establishing a Florida home to give consideration to the Keys, as this location will give them about the ultimate in winter temperature and weather conditions that can be found within our country.

"I am leaving for Florida within a day or two and expect to spend most of the winter there. I hope that any of my classmates who pass my way will stop in to see me. Our class is dwindling to the point now where almost everyone can know everyone else and friendship can become richer as the years pass."

An announcement in the *New York Times* of November 15, 1957, stated that Clarence Howe had been elected a director of The Canadian Fund, a mutual fund for United States investors managed by Calvin Bullock, Ltd. It has investments in Canadian securities, with assets of about \$38,000,000. — BRYANT NICHOLS, *President and Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary and Treasurer*, 18 Summit Street, Whitinsville, Mass.

1908

The third dinner meeting of the 1957-58 season will be held at the M.I.T. Faculty Club, 50 Memorial Drive, Cambridge, on Wednesday, March 5, 1958, at 6:00 P. M. Remember that the ladies are invited; so make your plans to be with us.

Plans for our 50th reunion, June 13 to 15, 1958, at Snow Inn, Harwichport on the Cape, will be discussed. This is a pretty important reunion — you never have but one 50th — so don't miss it.

Have you made your gift to the Alumni Fund? If not, please do so soon. Remember your gift helps to build up '08's — the 50th Year Gift to the Institute — so be generous.

Herbert C. Elton has announced the closing of his Bridgeport, Conn., office and the transfer to his home at 862 Merwins Lane, Westport, Conn. Alfred B. Babcock, after 48 years with the American Sugar Refining Co., 36 years as manager of the Brooklyn Refinery, has

retired to a new home in Darien, Conn. His address is 9 Morley Lane. We understand that the families of two of his children live nearby. Karl Kennison has called our attention to a story by Kurt Vonnegut, Jr., in the *Saturday Evening Post* of November 23, 1957. If you didn't see it, look it up; it's well worth your while. Kurt, Sr., would have been proud of his son.

William (Cub) Folsom, now lives at 11527 Seward Drive, Wheaton, Md. H. A. S. N.? — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Treasurer and Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

1910

Last month I did not have a single news item for the Class and this month I had to do some scratching to find the following meager items.

Jack Babcock stopped at my house on a recent Saturday and interrupted me in my job of raking leaves. It was a most welcome interruption, and I heard much of his visits to Maine and about his son Bill '39, whom I have always known and who is director of the North Carolina Highway Commission. At the last Alumni Council meeting I had a pleasant evening with Hal Manson. Hal has not heard from any classmate either. Recently I was in the same building where Hal Billings has his office, so I stopped in. Same old Hal, but very busy.

At the American Institute of Electrical Engineers' General Meeting in Chicago this last October, our classmate Hachiro Yamada presented a paper on "The Graphical Analysis of Transistor Switching Circuits."

I had a letter from Bieny Bien as follows: "It is with trepidation that I open the Technology Review for news of our Class. It was almost with shock that I read of the death of Christopher Schellens. He and I were in the Naval Architecture Course and our boards were very close to each other, so I knew him very well. He was always shy and diffident, probably due to the fact that he was rather more bright than the rest of us, or certainly than I; but I have always had the highest regard for him, not only as a man but as an engineer. There were 11 men who graduated from our Course in Naval Architecture in 1910. At the time of our 45th reunion there were nine surviving members. Of these there were four present at the reunion. However, Schellay, as we called him, was not there; and I very much wanted to see him. Finding that he lived nearby, I phoned him and pleaded with him to come over to the reunion, which he did. We all very much enjoyed seeing him again. He looked much the same except that he had a few more gray hairs, whereas I had fewer. I am sure that everyone who knew him, as I did, will regret his passing."

Otto Rietschlin has retired and has given up New England and gone to Florida, where he has built a house. I saw him just before he left, and he was enthusiastic over his new place; he says he has two grapefruit trees on his new estate.

I called on Dud Clapp at his plant in Cambridge not many days ago and found that Dud was in the hospital. So I went up to the Mount Auburn Hospital and found him looking fine but having trouble with circulation in his legs. Apparently Dud has many friends, as his room was well supplied with flowers and various delicacies not often seen in a sick man's room. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

1911

An outstanding feature of the early December regional conference sponsored by the M.I.T. Club of Western Pennsylvania in Pittsburgh on December 7 was the presentation of a citation to Irving White Wilson, XIV, board chairman of the Aluminum Company of America, recognizing him as a "loyal Alumnus, electrochemical engineer and captain of industry, distinguished for his steadfast devotion to the advancement of education and society."

As I wrote to Bun in a letter of congratulation: "It couldn't happen to a nicer guy!" It is just another outward and visible sign of the respect your classmates, fellow Alumni, and mankind have of your accomplishments and personality, Bun, and again we are so proud of you.

'Tis the pre-Christmas season and in early December came the first Christmas card — that always narrative card from the peripatetic Babbitts — Harold, XI, and Elma. After considerable time in South America, they are now located (until March 1) at Apartment 509, Skyline House, 600 Olympia Place, Seattle 99, Wash. According to the card, cleverly depicting North and South America and a blowup of Seattle: "Here we are again in Seattle with the showers of blessings we showed in 1954.

"Yes," it continues, "we left Brazil away back last June and now think of it with nostalgia. We left Rio on June 1, and after a tiring flight arrived in New York 19 hours late. In Elizabeth, N. J., we saw Virginia and Maurice; in Hastings, Harold's sister; and in Baltimore, Carlos Pereira and Ildeu Duarte and family. At Washington, D. C., we went through the 'illusory' conference of which we had heard, had our physicals, and were separated from the service. There also we met Ann Merry Coad, 21 months, the first and only great-grandchild. Elma posed in a picture of four generations on the female side. Ann's sister arrived on July 17.

"We flew to Flint, Mich., to pick up the car we had ordered in Brazil, then drove to Chicago and on to Champaign-Urbana, where we found Ruth. We finally arrived in Seattle on June 29. Harold went to work on July 1 for Brown and Caldwell, consulting engineers, San Francisco, who are making a preliminary plan and report for sewerage and drainage of the Metropolitan Seattle area. The task is Augean and must be finished by March 1. The question now uppermost: 'After March 1, what?' Which leads to a suggestion: How many great-grandchildren do '11 men have? Just "Write to Dennie" and we'll learn the answer.

Ralph Walker, IV, and his wife, and Jim Campbell and a guest were the only

representatives of '11 at this year's annual Silver Stein Dinner of the M.I.T. Club of New York at the Biltmore, New York City, on November 18, with our honorary member, Senator Tom Desmond '09, and his wife, Alice, also present. "Toni and I had planned to attend as usual," wrote Jim, "but at the last minute she was prevented by the fact that my daughter Jean was in the hospital recovering from an appendectomy, and Toni couldn't leave her that day and evening. As a result, I had as my guest my good friend Dr. John C. A. Gerster, the eminent surgeon who had performed the operation on my daughter."

A nice letter from Grace and Harry Tisdale, V, following their arrival in Florida in late November: "Well, here we are ensconced in a nice cottage after the trials and tribulations of selling a home and a 1500-mile trip down here. We have a lease on one of these delightful 'Sun-Sand-n-Surf Cottages' at Fort Meyers Beach, Fla., until February 7; and in the meantime we will have plenty of time to find or build what we want. We're within 200 feet of the Gulf and have a nice sandy beach, also good fishing. We have quite a few friends here, and eight of us sat down to Thanksgiving dinner at the home of a mutual friend.

"For the time being we just want to get a good rest and enjoy the sun and the swimming. See little chance of getting up north again for many moons. Grace is feeling better and we're sure the sun treatment will complete the cure. Saw Joe and Rose Harrington just before we left home and they were fine. Permanent mail address: P. O. Box 2655, Fort Meyers Beach, Fla."

Have just learned of the death of a classmate, Perley Kimball Brown, XI, of 358 Bridge Street, Manchester, N.H., on November 16. A native of Ramapo, N. Y., he had been a resident of Manchester for 65 years. He was a member of Chi Phi fraternity, and after graduation he became a partner in Kimball and Brown, consulting sanitary engineers. His avocation was rifle shooting; and for many years, as a member of the Manchester Rifle and Pistol Club, he was one of the 100 best marksmen in the country. Surviving are his wife, Mrs. Emilie W. Brown of Manchester, and a son, Wentworth K. Brown of Cropseyville, N. Y., to whom our sympathy has been expressed.

Announcement was made by Carl Ell, XI, President of Northeastern University, Boston, that ground will be broken next summer for a \$1,000,000 graduate center on the Back Bay campus. It will be used by nearly 3,000 graduates, as well as some of the undergrads, and its completion is expected in the spring of 1959.

To give you an idea of the phenomenal growth of N. U. under Carl's able administration, this new center will be the fourth building constructed by Northeastern since 1950. It will be a five-floor multi-purpose building designed in the same contemporary classical style as the other new buildings on the campus. In addition to classrooms, conference rooms, dining rooms, and lounges, the building will house the physics department, including a nuclear laboratory, an optics laboratory; a general laboratory, and a vibration-and-

sound laboratory. Carl sums it up: "To administer the graduate programs has become an increasing problem and it is apparent that a graduate center is acutely needed to centralize and effectively administer this important phase of Northeastern's educational program."

When it was decided in Marlboro, Mass., to present the Marlboro High School football team a citation from the City Council, after the team had won its fourth straight Midland League championship and amassed a record of 16 straight wins in two years, whom do you suppose they chose to write the citation? That's right; it was our Johnnie Bigelow, IV, native son and for many years city engineer there in Marlboro. Signs of the times: when Gordon Wilkes, II, reported a change of address — P. O. Box 426, East Orleans, Mass. — he added: "Just a change to a larger P. O. box to hold more second class mail!" It was also heartwarming to receive a letter from Frank Taylor, VI, who is enjoying retirement, he says, at 166 Shepard Street, Rochester, N. Y., telling how much he enjoys the 1911 class notes and how he enjoys reading of his many Course VI friends and their actions.

At this December 11 writing cards from classmates and others are beginning to arrive for Sara and me, and this greeting on the always timely 1957 "missile" greeting from Admiral Luis de Florez expresses my feelings exactly: "May you have Friendship and Affection for Christmas and Good Fortune for the New Year!" — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Framingham, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

Norwood Hall is president of Electro-Lift, Inc., which organization he has headed up for the last 25 years. Both he and his wife were among the youngest in appearance of any at Harwichport last June. His home is in New Jersey, but during the summer he commutes for long week ends to Cape Ann, where he enjoys his power cruiser. As his one daughter has four children, the Halls have a busy summer.

Phil Redfern was associated with the Byers Machine Company of Ravenna, Ohio, and became its owner and president. Following the death of his wife five years ago, he sold his business and has become our most traveled class member, spending six to nine months each year junketing all over the world. He is leaving shortly for a six-month cruise to Africa and the Far East. His two daughters presented him with five grandchildren.

Charlie Tuller, for many years with the Ford Motor Company, retired June 1 after 44 years, ending up as departmental manager of the Mercury Division. His one daughter, Dr. Elizabeth Tuller, is assistant to Dr. Fred Stores of the Harvard School of Public Health. The Tullers have made no definite plans for the future but will travel and look about for some pleasant spot in which to retire.

Bob Wiseman, who has been with Okonite Company of New Jersey for 36 years, now rates as vice-president and

chief engineer. He lost his wife 12 years ago and, having no children, would be glad to hear from any of the Class in his vicinity.

Louis Walsh has spent the past 20 years with Reconstruction Finance Corp. and the Small Business Authority in Boston, doing a great deal of traveling. Lou has changed very little and kept many of us amused at Harwichport with his stories of industrial contacts.

Harold Mabbott missed his first reunion this year due to the temporary illness of his wife, Ruth. Harold retired from the Army as a colonel 10 years ago and settled in Swarthmore, Pa., where he is very active in community affairs as well as a small part-time business. Four grandchildren keep him interested in the younger set.

Ray Wilson retired this spring after 44 years with the Factory Mutual Engineering Division, having served recently as manager of the Philadelphia District. Previous to this he was associate manager of the National Bureau of Industrial Protection in Washington and served as consulting engineer to various government agencies. Ray has two daughters and seven grandchildren. The Wilsons are planning to enjoy more traveling and are leaving shortly for an extended European trip. They intend to summer in Maine.

Henry Partridge is now located at 9-3A English Village, Cranford, N. J., where he has retired after 40 years with the Firestone Company in Akron. Heinie was in charge of the Real Estate Department, covering buildings and maintaining their chain of branches and stores. At the time of his retirement he was 17th in seniority in the company. Traveling seems to be his main business, as in the last six months he has traveled 46,000 miles by car with Mrs. Partridge, calling on old friends. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. C. BOLMER VAUGHAN, *Assistant Secretary*, 455 West 34th Street, New York 1, N. Y.

1913

After a lapse of a month, your Scribe will endeavor to enlighten our readers of news which has been supplied by a few loyal members of the Class of 1913 or through the Alumni Office and various press clipping bureaus. Again, let us remind you that this (when you read this report) is the year we celebrate our 45th reunion. Start saving your pennies, nickels, dimes, and dollars for that all important visit to Oyster Harbors Club, June 13, 14, and 15, then on to the 'Stute for Alumni Day. Our honor roll has increased by one since we last reminded you that "Class dues are due." Five Dollars (\$5.00), please. Dave Stern is now on our paid-up list. It costs real money to stage a REUNION. Dig down, boys, and show your officers that they have your confidence. If you can't find time to write, just write a check and mail it. We will accept telegraphic currency.

Well, our good friend and your classmate has hung up his track shoes, drawing instruments, and T-square; in other words, Charlie Trull retired as the head of Distribution Planning and Engineering for the Blackstone Valley Gas and Electric

Company. Yes, as you know, Charlie graduated in 1913, Course VI (Electrical Engineering). He started his career with Stone and Webster in Boston, then later became affiliated with the Lowell, Mass., Electric Light Company. During World War I, he served as a second lieutenant in the Signal Corps in England. Charlie began his study of maps for Blackstone in Pawtucket, R. I., in 1922. His maps are the key to the control for all company-owned equipment, such as all poles, wires, and transformers; they depict everything above and below ground. His master mosaic of the area around Pawtucket as well as Woonsocket shows graphically all lots, houses, and buildings in the company area. With a series of plans both old and new, Charlie's system assists in the planning and erection, or installation, or possibly the replacement of equipment, such as automatic "photo electric cell" controls which turn on and off the street lights as needed. Charlie now plans to give up his map making and reading except in Cape Cod and New Hampshire, where he expects to do a little golfing, a little fishing, and some sailing. So that's the way it goes, just another friend who has made his mark in this world and now will enjoy life to its fullest extent. See you, Charlie, at the reunion.

Can you imagine a classmate who studied architecture deserting the engineering field to become a playwright? Such is the course pursued by Mark W. Reed, who originally entered M.I.T. from Chelmsford, Mass., but shortly transferred to Harvard and studied under George Pierce Baker at the "47 Workshop." Mark wrote as his first play *In for Himself*, which was produced but did not reach Broadway. Subsequently, he wrote and produced in New York such successes as *Let's Get Rich*, *Petticoat Fever*, *No Code to Guide Her*, and *Yes, My Darling Daughter*. At present, he is devoting his time to writing for magazines, with the address Box 492, Boothbay Harbor, Maine. His *Petticoat Fever* was used by none other than Red Buttons in his Detroit debut at the Northland last July. We'll be watching patiently, Mark, for your next successful product on Broadway.

H. R. Wemple writes from Crockett's Cove, Stonington, R.F.D., Maine, and we quote in part: "It was interesting to see that our classmate Townsend received reward for his many years of teaching and educating others. I am sorry, but I would never have recognized him from the photograph. As for myself, you will note the above address — temporary for the summer months. I have reached the venerable and respectable old age of 65 in March, and retirement took place at the end of that month. I am drawing pension plus Social Security — the checks are wonderful. Prior to retirement I took one last business trip, which involved a cruise of 57 days beginning early in February and ending in early April. We (my wife and I) departed on the U. S. *Bergensford*; the trip touched Trinidad, Bahia, and Rio de Janeiro, thence across to Johannesburg. Sulphuric acid is essential, but every effort is being made to use native pyrite produced in their mining operations. I am enjoying life after 38 years in the sulphur industry, during which period Texas Gulf

produced and sold more sulphur than had been previously produced, so far as statistics record. This is a long epistle, but you asked for it. I hope you are enjoying life, and I regret that over the years reunions always came at a time I was attending conventions. I hope to be present at our 45th."

Thanks, H. R. If all of our retirees would take a few minutes and pen your experiences or just daily happenings, my job would be easy. See you at the reunion.

While Charlie Thompson and his attractive wife were traveling in the Maritimes, he read and sent to us a clipping which described a special convocation at St. Francis Xavier University at Antigonish, Nova Scotia, when a new science building was formally opened and five men of science received honorary degrees. Two of those honored are very close and dear to all Tech men — Dr. Julius A. Stratton '23, the present Chancellor and now the Acting President of M.I.T., and particularly our own Dr. W. L. Whitehead. Of course you know that Doctor Walter has joined our retired group. We quote in part the published testimonial from across the border: "Dr. Whitehead is well known to Nova Scotians as director of the Massachusetts Institute of Technology Summer School, which operates in conjunction with the Department of Mines at Crystal Cliffs, Nova Scotia. He is probably one of the best informed geologists in the world. Following his graduation from M.I.T. and service with the United States Army, he crossed the Andes from Argentina to Peru and later became the third geologist ever to enter the now oil-rich upper Orinoco Basin. Later, he successfully scouted the Caribbean Islands for new sources of bauxite, desperately needed for war purposes. He is reputed to know more about the Island of New Caledonia in the South Pacific than any living man. On the island he discovered three extensive deposits of chromite. He is a leading authority in the geology of Nova Scotia and is one of the men responsible for the establishment of the geology summer school in this province. St. Francis Xavier honors him this year as he retires from the staff of Massachusetts Institute of Technology and recognizes a 10-year association with the University and with the province." Well done, Walt. 1913 is proud of you. Now you will have the time to join your classmates at Oyster Harbors in June.

One of our dependables, Paul Cogan of Bethlehem, Pa., writes a short note: "I really have nothing startling to report on myself, for I am simply doing the routine — work, golf, and preparing for my retirement, with plans for that year in Europe. But here is my illustrious townsman and 1913'er actually leaving in a few days for what seems to be an interesting year in Europe. Maybe our classmates would like to know of Allison's honor." Thanks, Paul; how's Arlyle? We all are looking forward to seeing you both in June. From the clipping Paul sent, in part: "Professor Allison Butts, who retired from the Lehigh University Faculty last month after 41 years of teaching, has been selected to serve as a specialist in analysis of materials at the Technical University of Istanbul. The appointment for one year

has been made by the United Nations Educational, Scientific, and Cultural Organization. Professor and Mrs. Butts will leave New York by airplane Tuesday for Paris, where they will have a week's briefing before flying direct to Istanbul. Professor Butts's duties will include organizing and developing the Institute of Materials, installing laboratory equipment, and directing research projects. This is part of the technical assistance program of UNESCO. He was honored at the 10th annual faculty dinner in May, when he was presented with a silver tray with the inscription, 'Allison Butts, for loyal service to Lehigh University, 1916-1957.'

Al has lived a very full, active life in his field of metallurgy as a technical editor, author, and teacher; head of the Lehigh University's Department of Metallurgy; author of *Copper, the Science and Technology of the Metal, Its Alloys and Compounds* published in 1954, and *Textbook of Metallurgical Problems*, in conjunction with Dr. Bradley Stoughton; for 11 years associate editor of the *Mineral Industry*; consulting editor on metallurgical terms for Webster's *New International Dictionary* for many years; abstractor for *Chemical Abstracts*; contributor of articles on copper and metallurgy for the *Encyclopedia Britannica* and the *Encyclopedia Americana Annual*; a former vice-chairman of the mineral technical division of the American Society of Engineering Education; member of the Electrochemical Society and the Institute of Metals of Great Britain. Allison graduated from Princeton University and received his S.B. degree from M.I.T. Prior to joining the Lehigh staff in 1916, he was a research chemist for U. S. Metals Refinery Co., Carteret, N. J. Professor Butts and Mrs. B. expect to return to Bethlehem in 1958. Congratulations, Al. Come back soon — this Country needs you.

It was with a great deal of pleasure and joy that we received a long letter from our old friend and classmate, Johnny Welch, Johnny, Bob Nichols, and your Scribe are the only ones accounted for of our Junior Prom Committee: Hap Peck and Al Ranney are deceased, but William Norman Holmes has been among the missing for many years as far as class records or the Alumni Office are concerned. Johnny writes that after leaving Tech he was associated with the American Vulcanized Fiber Co. for a short period; then with the Winchester Arms Co. in 1915, where he remained during the first World War and where he became head of the laboratory with a staff of 70 in the research and testing division. Then he moved to Florida, becoming general manager and vice-president of a plant manufacturing rosin, pine oil, and turpentine out of stump wood. The depression of the '20's closed down the plant and he became a consultant for the Dierks Lumber and Coal Co. operated by two fraternity brothers Fred and De Vere Dierks, M.I.T.'12 and '14. With two mills in Arkansas and Oklahoma, Johnny investigated the matter of kiln drying their lumber, as his experience at the Winchester Co. on drying gunstocks for army rifles was very useful. At this time he formed the Welch Dry Kiln Company with headquarters in New Orleans,

then merged with two large companies on the West Coast to form the General Dry Kiln Co. Shortly, he gave up his interest on the Coast and transferred, during 1929, to the Standard Dry Kiln Company in Indianapolis, where he is still located. His concern designs and manufactures kiln equipment for drying lumber in furniture plants, sawmills, and other wood-working industries, besides making complete prefabricated buildings of large sizes which are shipped all over the world. Only lately two prefabricated kilns were shipped to Bangkok. Johnny expects to attend the reunion at Oyster Harbors in June, so we expect a very interesting and entertaining, as well as educational, discourse from him, if he is not too dried out. Yes, John, we shall reserve suitable accommodations for you, and we hope you will have your wife join us as well. Congratulations on your two married daughters and your seven grandchildren, but the Brewsters hold the record with 19 in their third generation.

Well, my hardies, or softies, that brings our February News Issue to a close. Look for more next month, when we shall feature the 45th 1913 reunion at Oyster Harbors, June 13, 14, and 15, 1958; also news from or about Jack Farwell, Larry Hart, Edward Hurst, George Richter, Dave Stern, Howdy Rand, and Howard Currier. Once again, remember that class dues are now due. Eddie Hurst and Johnny Welch have also joined the paid-up members, so their names are added to our honor roll. — GEORGE PHILIP CAPEN, *Secretary-Treasurer*, 60 Everett Street, Canton, Mass.

1914

One can always count on Russell Trufant to come up with a different answer to any situation. Month after month your Secretary has been telling about the retirements of our classmates. Now this word comes from Trufant: "In contrast with the usual notes on retirements, I report in my usual backward way that I have emerged from my 30-year retirement on the cranberry bogs and have accepted a career — conditional appointment with the Army Engineers, building an Air Reserve Flying Center at Bradley Field, Connecticut." In our Class we have for many years known Trufant as the Cranberry King of Cape Cod. Not only has he operated his own bogs but has done quite a bit of hydraulic engineering consulting. Now Trufant states: "The cranberry business has been poor or worse for the last five years. So instead of the bog's supporting me, I have had to turn to supporting it." As he still checks in at his bog at North Carver each week, your Secretary believes that Trufant is still very much interested in cranberries.

Another '14 man who has not retired is S. W. Stanyan. He has been associated for nearly 40 years with the Hoague Sprague Corp. of Lynn, Mass., a subsidiary of the United Shoe Machinery Corp. Stanyan recently became a director of the corporation, which is a manufacturer of shoe cartons and distributors of box-forming machines.

A word from Bert Hadley says that between being chairman of the trustees of

Middlebury College and operating his farm in Vermont, he finds many things to keep him occupied. He said that until a few years ago on his retirement that he would never be kept so busy installing snow fences and wintering his farm each fall.

In contrast with this, Charlie Fiske has locked up his Bath, Maine, farm; and, after a month in New York City, will be off to Arizona, where he will spend three months. He will stop in New York on his way back to reopen his farm in Maine.

Jim Holmes has kindly sent a folder that his Company — Holmes and Narver of Los Angeles — has brought out telling of their Nuclear Division. Your Secretary stands in awe in reading of their work in the nuclear field and the type of work he stands ready to undertake. The company has been, continually since 1948, prime contractor to the U. S. Atomic Energy Commission for the design, engineering construction, and operation of the Eniwetok Proving Ground facilities.

Those especially around Boston will recall William Jackson, who about 30 years ago was made an Honorary Member of our Class. He was a regular attendant at all of our dinners until a few years ago, when his health did not permit it. Jackson died after a long illness on November 15 at the age of 84. — H. B. RICHMOND, *Secretary*, Apartment 8-6A, 100 Memorial Drive, Cambridge 42, Mass. H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N. J.

1915

In next month's column you'll have a report of a big Boston class dinner, to be held on January 10, followed by one in New York on January 31. The November 5 issue of *Tech Talk*, the Institute house organ for the staff, carried a good-looking picture of Barbara Thomas with this story: "The Physics Department is going strong in the M.I.T. Silver Club. At the big fall banquet on November 14, Mrs. Barbara Thomas presided as chairman. Mrs. Thomas has been holding the Physics Undergraduate Office together for 26 years and knows all there is to know about the myriad inner workings of Course VIII. The new chairman's working quarters are not spacious but, as Mrs. Thomas puts it, 'this is more like a living room than an office.' This, she explains, is because students are always drifting in to settle down for a chat, to consult her on the intricacies of being a freshman, or to let off steam after a tough quiz. 'To have contact with these boys is simply wonderful,' says Mrs. Thomas. 'It's the best kind of a job in the world for a woman of my age.'

"M.I.T. runs strong in the Thomas family. Her husband took his S.B. in Civil Engineering ('the reason I'm here now'), her son-in-law in Aeronautical." An orchid to Barbara from 1915 for her long and loyal service, for which she was presented an M.I.T. chair. She has always been willing and ready to offer kind help and advice to sons and friends of 1915, students at M.I.T. Long may she carry on.

Ray Walcott has voluntarily been rounding up 1915 men for the New York

M.I.T. Club, now comfortably settled at the Hotel Biltmore, and sends the following information on some of our men. Ray is at Stauffer Chemical Company, 380 Madison Avenue, New York 17 — phone, Oxford 7-0600. Wink Howlett: "I've sold our Newton house and have a place at South Yarmouth, Cape Cod, Mass., in preparation for retirement in a couple of years."

John S. Little: "In May, 1957, I retired from Western Electric Company, where I had been superintendent of Manufacturing Engineering for 30 years. As a visiting professor I am now teaching at North Carolina State College at Raleigh, N. C., and I enjoy the work and the country very much." Henry E. Rossell lives in Sheffield, Mass., in the summer but has retired officially to 319 West New York Avenue, De Land, Fla.

On the front page of the November 23 *Framingham (Mass.) News* is a good picture of Max Woythaler, who has come out of retirement to become president of The Lombard Governor Corp., Ashland, Mass., to succeed Mr. Henry E. Warren '94, who recently passed away. Max, a former president of the Framingham Union Hospital, recently returned there for a second operation; and it's a pleasure to tell you that he is recovering successfully. Congratulations all around to Max, who, over the years, has done such a thorough job as our class agent for the Alumni Fund.

Larry Quirk is an early prospect for the New York class dinner on January 31, as on November 4 he wrote: "I am wondering if you have made arrangements for our winter New York dinner at this early date. Although it is about three months away, I am making plans for a trip to Mexico and hope to leave the Saturday following our Friday meeting — saving an extra trip to New York. At present I am assuming we will meet on Friday, January 31, 1958; but when a definite date is fixed, will you please let me know. Also, give me George Rooney's address. He and John O'Brien are the last of our old gang left."

At the Fall General Meeting of the American Institute of Electrical Engineers in Chicago, October 7 to 11, Phil Alger gave a paper, "Professional Conduct — The Activities of Other Organizations in This Field and Their Relation to A.I.E.E." The McGraw-Hill Book Company announces publication of *Mathematics for Science and Engineering* by Philip L. Alger, consulting engineer, Medium Induction Motor Department, General Electric Company, Schenectady, N. Y. "This complete revision of *Engineering Mathematics* by the famous Charles P. Steinmetz presents methods and procedures for finding, understanding, and applying the mathematical procedures best adapted to solve a particular problem. It aims to help students, teachers, and practicing engineers to use mathematics effectively by first showing the unity and simplicity of the basic mathematical ideas and then making numerical calculations easy." Congratulations to Phil, who, for many years, has been outstanding in this field.

Cynthia Blodgett (Charlie's widow) has moved to 313 State Street, Bangor, Maine, where she lives with her daughter and would be glad to see any classmates and

their families traveling up there. The *Boston Sunday Herald*, September 15, carried a picture and long description of the pretty colonial ranch house and garden of Mr. and Mrs. Carl W. Wood in Winchester, Mass. It's a lovely looking place.

On June 19 Ben Neal sent one of his 50th Fund letters to our classmate Tsang-Kyien Yuan in Shanghai, China. It was returned on August 23 covered with mysterious looking markings which, translated, meant "Unknown Here." Ben said it must have been on a slow boat to China (and back) — but the wonder is how it got in and out of Shanghai. Larry Landers, as chairman of the Combined Jewish Appeal Business Men's Council in Boston, did an outstanding job in the recent cash collection drive in Boston. He works with the same spirit for 1915. Nice going, Larry. Bill Holway is still doing big things in Tulsa, Okla. He writes: "We are planning two very large projects: a \$35,000,000 hydroelectric project for the Grand River Dam Authority, and a \$40,000,000 new water supply project for the city of Tulsa. It was necessary for us to have additional space and we purchased a building which had formerly been used by a radio station. The firm of W. R. Holway and Associates is made up of: Mr. W. R. Holway, Class of 1915; Mr. W. N. Holway, Class of 1943; and Mr. D. K. Holway, Class of 1947." "Help . . ." — AZEL W. MACK, Secretary, 100 Memorial Drive, Cambridge 42, Mass.

1916

The December 5 luncheon at the Biltmore Hotel, new headquarters of the M.I.T. Club of New York, saw the 1916 table with eight in attendance: Walt Binger, Art Caldwell, Jap Carr (from Pennsylvania), Harold Dodge, Jim Evans, Herb Mendelson, Stew Rowlett, and Don Webster (from upstate New York). The heavy storm prevented several from coming — notably Ralph Fletcher who was planning to fly down, Earl Mellen, and Gil Gaus. Joe Barker, the sponsor of these luncheons, was busy with the National Association of Manufacturers and Steve Brophy was up at M.I.T. on official business. Jim Evans, as usual, had a collection of fast-moving back-room and front-room stories; and Herb Mendelson responded to pressure for more anecdotes about his safari. Jim reminded all present of a 35th reunion item — some sort of operation that Dr. Paul Duff offered to perform free sometime, for someone, somewhere, when necessary — but Jim didn't think that the promise would prevent Paul from attending future reunions. These New York luncheons are held each month, on the Thursday following the first Monday of the month. Those who are anywhere near New York are urged to attend — visitors to New York are strongly urged.

We learned at the December luncheon that Art Caldwell had retired in November as vice-president of the Chemical Corn Exchange Bank in New York. Art is such a modest one, we don't often hear about any of his accomplishments. But Steve Brophy, one of your Secretary's old reliables for constructive news about 1916'ers, tells us that Art was the bank's

principal trouble shooter for a number of years; "And while his work did not come to the public attention, I have it on the authority of senior officers of the bank that Art was instrumental in saving them millions of dollars." An outstanding old reliable, we're sure!

Vannevar Bush received another honor early in November — the annual New England Award of the Engineering Societies of New England at the Hotel Lenox in Boston. The award, given for outstanding achievement by a New England engineer, was presented by Howard Turner, chairman of the E.S.N.E. Award Committee. The speaker was Professor Chester L. Dawes '09, who retired from Harvard in 1953, and with whom, incidentally, your Secretary was associated in running the Technical Electrical Measurements Laboratory of the Electrical Engineering Department for the 1916-17 school year.

Back in October, at a convention of the American Society of Civil Engineers, Joe Barker, as president of the Engineers Joint Council, urged engineers to form a national society like the American Medical Association and the American Bar Association. He declared that greater unity was needed to help bind "splinter groups." Joe proposed an organization that might be called the American Society of Engineers, to which all qualified engineers could belong. He said it could speak for the entire profession on such questions as education, legislation, engineering, philosophy, engineering policy, and similar subjects. At the time of writing this, we understand Joe and Mary are to be in Europe for a period of several months starting in February.

Al Pettie writes that he's been enjoying retirement since a year ago January down in Tryon, N. C., where he built a five-room "contemporary house on one level with an attic and a basement (Neatest trick of the week, eh?). They have an acre and a half and look out on 1,000 acres of mountains. Tryon is on the edge of the Blue Ridge Mountains and on the edge of South Carolina, about 40 miles south of Asheville. Some 1,200-1,500 North Carolinians and perhaps 500-600 retired Northerners live there, scattered over the rolling hillsides within a radius of about five miles. As Al says: "It is and it isn't like living in a small rural community. I find myself terrifically busy with a part-time job of writing and administering an engineering background course for General Cable salesmen, finishing some odds and ends about the house, and creating a landscape around the house. The field was pretty bald when we took over, so we can grow our own oaks and dogwoods where we want them. Right now I am planting some 50 dogwoods, redbuds, silver bells, crepe myrtles, and so forth, all contributed from our neighbors' surplus. Not long ago Helen and I went North to see our four grandsons and granddaughter. We are getting along. Come and see us on your next trip."

Charlie Reed tells of a bit of traveling last fall with his wife — first to Sea Island, Ga., where they stayed for a week, and then to Winter Park, Fla., where Charlie has a stepson in Rollins College. "After loading down with 10 bags of oranges, we

drove back route 441 through the Great Smokies to Gatlinburg, Tenn. Next day we went up onto the Blue Ridge Parkway at Asheville, N. C. It was like a trip through Fairyland. Fog the night before had frozen to every twig and branch on the mountain tops; and the sun, shining on the iced trees, made a sparkling fringe of crystals. The parkway wound right up through it all, and after such a glorious sight we became very blasé about further mountain scenery."

In the last issue we mentioned Herb Mendelson's own private African safari, with a promise that some details would follow. He and Vi reached Nairobi, Kenya Colony, on August 3, via B.O.A.C. from Rome. Talk about big game! The stories he can tell at those New York luncheons! We asked him to write down some of his story for the column. He has, so listen to excerpts:

"On August 7, the five-ton lorry piled high with tents, food, camp supplies, spare tires and parts, a kerosene-operated refrigerator, three drums of gas, kitchen equipment, and other necessities for our 32-day safari started the long trek southward to our hunting territory. The gun bearers, trackers, skimmers, cook, personal tent boys, chauffeurs and their assistants, 16 in all, were perched high on top of the load, where they clung like so many flies. Andrew Holmberg, our White Hunter, his lovely wife Sonja, Vi, and I followed in the jeep, which was loaded with the rifles, a 375 H and H Magnum, a 30-'06 Springfield, a .300 Savage, a 22 for birds, two double barrel .470 caliber heavy rifles, and a 16 gauge shotgun; also our personal clothing, ammunition, and a 50 gallon drum of gasoline.

"Our first hunting camp was to be some 400 miles south of Nairobi on the Rungwa River in Tanganyika. Since we were only the fourth party ever to hunt this particular area, a great deal of reconnaissance was necessary to locate not only our camp site but the game we were interested in. The going was extremely rough as we bounced over elephant tracks some 16 or more inches in diameter and eight or ten inches deep, and tried to avoid the steep banks of dried up rivers and gullies, and locate a spot where the jeep and lorry (truck to you) could safely cross. Frequently, the spade and pick had to be resorted to in order to grade the river banks or provide fill for one of the numerous gullies that crisscrossed the country, now dry, but raging torrents in the wet season.

"At noon of the fourth day, we located a likely camping place on the north bank of the Rungwa River near several water holes. The 16 natives started unloading the truck and while pitching one of the tents inadvertently disturbed a beehive swung high in an acacia tree by native honey hunters. Andrew Holmberg yelled "Head for the river bed!" The natives ran, flailing and slapping their arms. The shrieks and yells and laughter by those who escaped the vengeful bees echoed across the countryside. Vi and I, in the river bed some 20 yards away, were untouched. The bees just did not locate us. Some took shelter in the truck cab and jeep. The water hole (really a mud hole) provided a refuge for others. After two

hours the bees gave up and returned to their hive, a cylindrical drum about three or four feet long and one foot in diameter, made of hide or bark. Small holes served as entrance and exit for the bees. The hives were hung from the limb of a tree and baited with honey. Once or twice a year during the dry season when the country is passible and the 10-foot grass has been burned, the honey is harvested. The natives eat the honey, and the bees' wax is exported.

"We hunted hard every day. My shooting the first two weeks was terrible, and the game frequently stood at 75 yards and chuckled at me as I let go a volley of three or more shots. I did get a splendid sable antelope for the museum and a roan antelope for myself. The kudus I missed those first 10 days, I will not dwell upon. Then came the night when we were awakened by the coughing and terrific roaring of lions right in camp. The entire camp was up, lanterns lighted and rifles ready. The lions were hunting at the water hole about 20 yards from camp and had probably gotten the scent of some of our camp-meat hung in a tree near the cook's fire, which usually was kept going all night to discourage marauding lions and leopards. After an hour of the racket, we decided to turn in; and we soon were sound asleep despite the roars of our visitors. Why should they bother with our tough hides when a hind quarter of a roan antelope was hanging in the nearby tree?

"After two weeks at this camp, where we saw many waterbuck, buffalo, roan antelope, lichtenstein, hartebeest, and kudu, we moved on up river about 15 miles. For some unexplainable reason this move dispelled the gremlins from the rifles and my shooting henceforth was all I could desire." So what happened? Did Herb get the rhino or did the rhino get Herb? Read the March issue for the next episode in this thrilling adventure!

Speaking of grandchildren (or were we?), we have two new high-count reports — Duke Wellington with 21 and Eric Schabacker with 16! (According to our records, other high scorers are Hovey Freeman, 17; Earl Mellen, 11; Emory Kemp, 11; and Moose Jewett, 11.) Duke's letter said he was doing this and that — mostly getting things for Christmas for the 21 grandchildren. He goes on to say: "Not all one family — half are on Mrs. Wellington's side. Might say that Anne was widow of Sanford L. Willis, Class of 1915. When these gifts are all set, hope to take off for Florida." Duke spent the summer at their cottage on Littlejohn Island, Maine, which is part of the town of Yarmouth. Says any 1916'er up that way in the summer will be most welcome, but he'll not be responsible for any damage done to their cars from the bad roads. As to hobbies, Duke says maybe they're not hobbies, but horse racing in summer and dog racing in winter are his interests. "And believe it or not, they do not save me a thing. Of course, you cannot go far astray with only \$2.00 on a race."

Our other high scorer, Eric Schabacker of Erie, Pa., reports as follows: "As to statistics — they continue to grow. We have five children, all married but the youngest, who will step off next June. As

Ray Brown says, with so many producing units we should make a good showing, and we do; our 16th grandchild is due momentarily — all of them normal, healthy, and happy, for which we are humbly thankful. Unfortunately, they are spread around too far; but that gives us an excuse to travel. Our only son, a Navy lieutenant commander, is stationed at Point Mugu, Calif.; one daughter is in Denver; one in Stockbridge, Mass.; one in Philadelphia; and one in Erie — the Erie son-in-law is treasurer and general manager of our miniature porcelain enameling shop, which is very nice for me." Eric says he hasn't seen any of our classmates since the 40th reunion; when he returned from a recent trip, he found that Gene Barney, VI, had called at the office. Eric concludes with the observation that Erie is quite an industrial city and he's sure that some of the 1916'ers must visit there occasionally; and he sure would appreciate a visit from any of them.

Speaking of Gene Barney, we recently heard from him, too. He retired last July after 41 years with General Motors, the first 26 being with Delco Light and Frigidaire and the last 15 with Detroit Diesel and the Engine Group of the Corporation. Since retirement, he and Mrs. Barney have been traveling all over. In July they went out through Banff; Lake Louise; Victoria, B. C.; Seattle; Portland; and Glacier National Park. During October they toured New York, Vermont, New Hampshire, Maine, and Massachusetts, including Cape Cod. On the next trip they plan to go down to Florida and hope to stop off in Tryon, N. C., to visit Al Pettee.

Back in November, Jap Carr wrote that the last 1916'er he had seen was Joe Barker, who was just getting ready to leave the Homestead at Hot Springs as he was arriving. "Spent Fall Tennis Week there playing, for my age, far too much tennis, but having a wonderful time doing it. With mild weather continuing, have been able to play tennis up until now two or three times a week and have dates for three times again this coming week. We 'bundle up' in warm clothes and play even in snow flurries at Buck Hill Falls and Split Rock Lodge." Then, speaking of the December 5 class luncheon: "I expect to come to N. Y. C. for the December 5 class luncheon at the new Tech Club in the Biltmore. Also another Tech affair the next day; and after the luncheon I have a tennis date, believe it or not, with an M.I.T. Alumnus, Class of 1907, Harold Farrington'07. (So you see I might still be playing tennis at our 50th reunion.)" Jap says Northeastern Pennsylvania is pretty much a backwash area as far as Tech men are concerned. In recent years a Tech Club was started, and at a recent meeting they had 10 men attending. So he doesn't have a great many M.I.T. contacts. He mentioned particularly Don Webster's added term in a Rochester hospital, and that they had missed the Websters' occasional fall visit at Buck Hill Falls for the beautiful autumn foliage. As for retirement: "After the first year or so I find retirement not hard to take. I have enough personal affairs to look after to keep me busy, a few community activities — probably not as many as I should have — and a precarious hold on my

principal hobby or sport, tennis. Alas, no grandchildren, not even one on first base. Well, we're still hoping."

We had word, too, from Andy Wither- spoon, who's a real estate operator and holder in Baltimore but is living in "Win- chester-on-the-Severn" in Annapolis. His son is a Baltimore lawyer; and his daugh- ter, who worked at Bell Laboratories for several years before marriage, is married to a Baltimore boy and living in New York.

From T. E. Raymond we received a 1957 annual report of Racine Hydraulics and Machines, Inc. Inside we find not only a recent and up-to-date picture of T. E. himself, but an accounting of the Simplex Engineering Co. of Zanesville, Ohio, which recently merged with Racine. T. E. is president of Simplex, which he founded in 1927, and is recognized as one of the most able hydraulic engineers in the industry today. He is assisted by his two sons, T. E. Raymond, Jr., and Robert E. Raymond, who are also hydraulic en- gineers. The Simplex line of hydraulic systems, sold under the trade name SECO, is applied to operations such as metal ex- trusion, metal drawing, transfer molding, and other operations where high pressure is needed for great hydraulic force.

We had a brief note from Joel Connolly in Taiwan who is looking up the where- abouts of one or two of our classmates there. Joel sends a cute snapshot of four small children in the Botanic Garden in Taipei, China, two of whom, apparently not more than six years old, are carrying what Joel says are "live babies, not dolls" on their backs. And oh, yes, we had an- other message from Joel — the Christmas Greetings from the Connollys, 1957 — telling much of what they have been doing over the past year in the Far East. We hope to give some of the details in the next issue. He mentions that "yester- day (November 24, 1957) they had a most enjoyable M.I.T. Club of China meeting with lunch and a boat ride in Keelung Harbor." Joel expects to be back in Ameri- ca on home leave about next August, and we are urging him to make it June instead for the 42nd reunion.

Word from Val Ellicott says that he doesn't have enough change in his status to make a news item. He expressed pleas- ure over the recognition of Dr. Killian in his new appointment in Washington. Says he has met Dr. Killian's daughter, who is married to a close friend of Val's son.

With respect to Doc Little's talk to Northern New Jersey's M.I.T. Club in Hackensack early in December, we under- stand Jim Evans took as his guests the superintendents of schools of Paterson and Fair Lawn, N. J.

We regret to report the passing of Wil- liam J. Sloan on November 3 at his home in Westerly, R. I. After graduation Bill moved to Providence and was employed by the Rhode Island Department of Pub- lic Works, Division of Roads and Bridges. He served there for 34 years as bridge maintenance engineer until his retirement in 1950, when he returned to Westerly to make his home. A message of sympathy has been sent to Mrs. Sloan.

In October, Duncan Owler retired as president of the Fall River Electric Light Co. However, he's not going to loaf, for

he will continue as a director and chair- man of the Executive Committee of the company. A native of Pawtucket, he has been associated with the company 41 years, starting in 1916 as an electrical engineer and progressing through various offices until assuming the presidency. It is predicted that he will now be able to attend all the reunions on the Cape.

On November 24, Mr. and Mrs. Hovey Freeman were given a cocktail party and dinner by their six children on the occa- sion of their 40th wedding anniversary. About 50 of the best friends they have known over the years attended, and two of their youngsters who live in the Ba- hamas flew up for the occasion. Their youngest son and his wife, who were sail- ing around the world and had reached Gibraltar from Hong Kong, could not be present.

And now we come to the end of the story for this time — again with a note of appreciation to the many who have an- swered the call for news, and a "why not now?" to those who have been thinking of answering but haven't yet. The column is what you make it! And to repeat, once more — if near New York on Thursday following the first Monday of any month, come to the M.I.T. Club of New York headquarters in the Biltmore, near Grand Central Station, for a 1916 luncheon — short and snappy, inexpensive! Finally, plan now to be at our 42nd reunion, June 13, 14, and 15, at Chatham on the Cape. — HAROLD F. DODGE, *Secretary*, 96 Briarcliff Road, Mountain Lakes, N. J.

1917

Penn Brooks, Dean of M.I.T.'s School of Industrial Management, one of those of our Class whom we hear about, but not from, writes as follows about the fun that he is having since leaving his old job as vice-president of Sears, Roebuck, and Co.: "Now, if you want the official record as I have written it, write in for a copy of the Dean's Report for the year 1956-1957 and that will give you the story as I see it. One reason that I have delayed so long in writing something for the class notes is that I am busy. The six years since I left Sears and entered the academic world — the administrative part of it — have been about as busy as any years of my life. The evolution of Course XV into a full-fledged school involving recruitment of staff, building programs, attracting graduate students and men from industry for the Sloan Fellowship Program and our Senior Executive Program, have been demanding and exciting tasks. I am glad to report that my wife has, likewise, enjoyed the experience and has put herself into the life of the Institute wholeheart- edly and has played an important role, particularly with the wives of our stu- dents. We find that the wives of students are very important." In regard to "hot news" for only 1917 ears Penn writes: "Of course there are things that are confiden- tial and things that are not, but there are times when, if you want to hold your job, you better keep your mouth shut. Come 'round and see me sometime. Warm regards to all my friends."

Tubby Strout, former Class President and now regional Vice-president for class

affairs on the Pacific Coast, received the following note from Joseph B. Wirt of Wheatland, Calif.: "I was glad to hear from you, as Tech men are few and far between in this neck of the woods. I have retired from teaching physics, chemistry, and math at Yuba College. I took time out a few years ago to work as a mining engineer in the mother lode country. I am now dabbling in real estate. I have a son — an electronic engineer major in the U. S. Air Force — and a daughter who lives with me. During the last war, I helped manufacture mustard at the Rocky Moun- tain Arsenal in Denver. I am now build- ing an adobe home for my family in my spare moments. I am also working with engineers on plans for a dam to prevent floods in our area. I am enjoying life watching some of the developments we did not dream of when we were in Cop- ley Square."

The Institute has been advised of the death of Dr. Joseph H. Axtmayer, who for many years has been connected with the University of Puerto Rico, at Rio Pied- ras, Puerto Rico.

We are glad to hear from those whose life has been spent in foreign countries. Y. T. Chang writes: "I have moved my family and business (Hochang and Com- pany) to Hong Kong since 1948. I am still doing export business of animal by-prod- ucts such as bristles and feathers. My wife and I have two sons and three daughters — all married except one. We have seven grandchildren. I have no political interest, and my hobby has been reading of current and ancient literature. I expect to retire from business in a year or two as I am now 67 years of age."

Those who subscribe for the *U. S. News and World Report* may have seen the ad- vertisement of Blue Cross and Blue Shield in the November 8 issue featuring two pictures of Bob Erb, chairman of the board of Thom McAn Shoe Co. In one picture he is "delicately" holding one of his products. Bob stated in the ad that Blue Cross and Blue Shield are "just what the doctor ordered" for his 6,500 em- ployees.

As evidence of the civic interests of members of our Class, the *Boston Globe* featured a headline in November: "Stan- ley M. Lane named to head New Eng- land Baptist Hospital." The article goes on to say: "Stanley M. Lane of Wellesley was elected president of the New Eng- land Baptist Hospital at the 64th annual dinner of the board of executives. Lane had served as executive vice-president and chairman of the executive committee many years. He is treasurer of the Lane Brothers Shoe Co. of Boston and the C. A. Grosvenor Shoe Co. of Worcester. He is a director of the Boston Y.M.C.A., and is active in many church and charitable organizations." Another 1917'er who is de- voting time and effort to worth-while in- terests is none other than our northwest regional vice-president, Neal Tourtellotte. The Beta Theta Pi publication of October states: "Neal E. Tourtellotte, M.I.T. 1917, who traditionally has played Santa Claus for Seattle Orthopedic Hospital and for the children of his neighbors since 1930, has been named chairman of the North- west Memorial Hospital building fund campaign at Seattle. Also a leader in as-

stance to the blind in his state, he is president of Tourtellotte Corporation, and is . . . a breeder of livestock."

Max J. Mackler of Tampa, Fla., announces that he has retired from active administrative work in public health and public housing fields. He is devoting some of his time to industrial consulting. He has been particularly active in local and national affairs of the United Cerebral Palsy Association. In November, Lieutenant General Leslie Groves (retired), who is now vice-president of Sperry Rand Corp., spoke before the New York Society of American Military Engineers on the subject of nuclear development. General Groves is known nationally and internationally for his services in connection with the Manhattan Atomic Bomb Project, which he headed from its inception.

Another classmate is in the news. Gordon Gray, director of the office of Defense Mobilization, has just appointed Walt Whitman a member of an 11-man advisory committee to examine the nation's stockpiling of critical materials for defense purposes. Mr. Gray said that entirely new concepts of warfare had made an independent and critical review necessary at this time. Word has just been received that Irving C. Eaton of Waterville, Maine, has just retired from the General Electric Co. after 26 years of service.

While many of our classmates are contemplating retirement, others are increasing their business activities. The United States Steel Corp. announced on November 22 that Joshua C. Whetzel has been appointed manager of the tin plate products for the company, effective December 1. Joshua has spent his entire career with the company. In recent years he has been assistant manager of tin plate products for the corporation.

Irving Fineman of South Shaftsbury, Vt., who is listed as an author, teacher, lecturer (S.B. in Naval Architecture), and the author of the novel *Doctor Addams* — a novel which indicates the dilemma of the modern man of science — contributes the following poem: "The time will come when man's search will attain / The deepest secrets of his wondrous brain; / How thoughts arise; where memories are stored; / Of what stuff dreams are made . . . His works afford / Him means to study outside his own head, / Marvellous machines — imperfect, really dead, / Yet by his brain endowed with lifelike powers; / They scan, remember, calculate for hours . . . / On the sixth day, we are told, God willfully made, / In His own image, man. Imperfect are we, / Mortal, sinful, though endowed — sole willful aid / Among all His works — with divine creativity. / Why then did God make man? Was it that He / Thus only might study divinity?"

We solicit from class members any Best Smiles that they would like to share with others. Our offering for this issue is: McGregor: "What's the idea of a band of mourning on your left leg, Jock?" Jock: "Me mither has passed away." McGregor: "But why on your leg instead of your sleeve?" Jock: "She was me stepmither." — W. I. McNEILL, *Secretary*, 14 Hillcrest Avenue, Summit, N. J. STANLEY C. DUNNING, *Assistant Secretary*, 21 Washington Avenue, Cambridge 40, Mass.

It is often impossible to appraise the entire precipitate of many years accumulation of working and waiting. For example, Don MacArdle first thought he was a chemist. He did a thesis with the rather overwhelming title, "Decomposition of Phosgene by Special Carbon," but has turned out to be a business consultant. On the side, he conducted the orchestra sophomore and junior year. But there is a magnificent orderliness in the working of chemistry. Hence, the precipitate of Don's extracurricular activity has been a lifelong interest in music. We have already chronicled work on his book entitled, *New Beethoven Letters*, which was published last February by the University of Oklahoma Press. The latest by-product of this somewhat saturated solution was his appearance on the "\$64,000 Question." He made the \$512 level by knowing that Ravel wrote the *Mother Goose Suite*. The thousand dollar question was easy: Rimski-Korsakov composed *Scheherazade* based on the incomparable *Arabian Nights*. But, alas, Don went down on the \$2,000 question, which caught up with him on November 26. He knew that Robert Schumann produced the *Variations on the name Abegg* but mistakenly thought the work was dedicated to Schumann's fiancée, Clara, instead of to the Countess Meta Abegg. Still, \$1,000 for a trip to New York is not exactly chicken feed even though there was no new Cadillac, or the promise of more loot, to enrich the MacArdle Thanksgiving. Observing our plea for news of the whereabouts of Marion Coes, Don says she is Mrs. Arthur Webster Kenney of 1647 Thirty-fourth Street, N.W., Washington 7, D. C.

Civil Engineering for October, discussing the new officers for the American Society of Civil Engineers, says in part: "The new society director for District 9 is Craig P. Hazelet, well-known consultant and senior partner in the firm of Hazelet and Erdal, consulting engineers of Louisville, Ky. Mr. Hazelet's 40-year professional career has been chiefly concerned with the design and construction of bridges. He graduated from the University of Washington with a B.S. degree in Civil Engineering in 1915. This education was later supplemented by M.I.T. In 1936 Mr. Hazelet formed Hazelet and Erdal, successor to the Scherzer Rolling Lift Bridge Company, which he had served as chief engineer, general manager, and president during the period 1922-1936. In the course of his career, Hazelet has been engaged in the design of major bridges in China, Spain, and Canada, and numerous outstanding bridges over principal rivers in the United States. In the period 1942-1945 he served as a special consultant to the Army Transportation Corps on the design of ships, barges, and cranes."

Granville Smith, writing from 606 Canal Road, Siesta Key, Sarasota, Fla., says that since his retirement from the Army in January, 1954, because of heart trouble, he has been back to college. At the American University (Washington) he took a course in economics and investment analysis in the hope of mastering Wall

Street. Recent events proved his crystal ball out of focus so he chucked it, bought a place in Florida, and now devotes his researches to growing citrus in his tropical paradise. Your Secretary has just been nominated a national vice-president of the Society for the Advancement of Management, of which he has been a director of the Boston Chapter for over a decade. He also is gratified that his book on *Love and Marriage*, originally written for the Technology students and published in 1948 by Harper, has now achieved European publication by William Heinemann Medical Books, Ltd. The American edition has so far been reprinted eight times since its first publication.

It is a beautiful December afternoon. Guess I'll lay down my quill and go deer hunting. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey Center, N. H.

1919

A nice letter in from Bernie Coleman reads as follows: "Just returned from a grand vacation in Europe. In Copenhagen, Evelyn and I had lunch with Herman Dedichen, whom I hadn't seen since we graduated. When I phoned him we both had to claim age forgetfulness, and Herman said, 'Although we don't remember each other, I can guarantee that neither of us looks as pretty as we did 40 years ago.' . . . Herman is one of the owners of *Politiko*, the principal newspaper in Copenhagen, and the author of a couple of books on cooking, which is one of his hobbies. We reminisced on M.I.T. days. Herman seemed glad to get all the news I could give him about our Class. Meeting him after all these years was one of the high lights of our trip. . . . Returning to Los Angeles after nine weeks abroad, I found my desk [the Chase Sanitarium, 1032 W. 18th Street, Los Angeles 15, Calif. is Bernie's headquarters] piled high — high enough to impel me to leave town; but I lacked the nerve and started to grind away at unfinished accumulated business. My lap is in readiness for 'X' Coleman, the fourth grandchild, due any day now. Regards to all."

A clipping from the *Baltimore* (Md.) *Sun* reveals that Roy Mackay has been promoted to superintendent of the Rod and Wire Division of Bethlehem Steel Company's Sparrows Point plant. Roy joined Bethlehem in 1922 as an assistant electrical foreman, and advancing through various positions, became assistant superintendent in 1937. Before that Roy served as a physics instructor at Georgia Tech. Congratulations on the promotion, Roy. Keep up the good work!

Your Class Secretary had the pleasure of seeing Don Kitchin at the Alumni Council meeting at M.I.T. in November. And also George McCreery, who now is a lecturer in civil engineering at M.I.T. and serves on the Alumni Council as our class representative.

A card from Royden L. Burbank says that his address is 16 Sharpe Road, Belmont 78, Mass., and not 17, as was erroneously indicated in a recent write-up. Otherwise, he says, there is no change in his work or any special news.

Herman A. (Duke) Herzog writes: "Just going along as usual. Did a little

fishing in the Ozarks, but Dorothy caught the big ones . . . 6 Rainbows. Regards to all."

From Ardmore, Pa., Charlie Hyde says: "Still at Frankford Arsenal as chief auditor. Many M.I.T. men, though not of the Class of '19, are here. All my children married, and I'm a grandpop five times."

Reggie Hunt writes: "The only news I have is of interest only to me. My last electrocardiogram was good enough to lift my ban on sailing — so next summer my boat, after three years on shore, will be in the water off Boothbay Harbor again. My best to all." We think the news is very interesting, and we're glad to hear it, Reggie.

We regret to announce that James P. Thurber, according to advice received from the M.I.T. Alumni Register, passed away on October 19, 1957. We are also in receipt of a belated notice regarding the demise of William C. Haddock, Jr., in 1956. We are sorry to learn of the passing of our former classmates. — EUGENE R. SMOLEY '19, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N. Y.

1920

Your Secretary reports with pride that Dean Bob Sumwalt of the University of South Carolina has recently been appointed acting president of the University. Bob has been a member of the faculty there since 1926, serving first as an associate professor of civil engineering, and being awarded a full professorship in 1931. Later, he became dean of the School of Engineering. He has been chairman of the State Planning Board and the State Board of Housing and is currently chairman of the State Board of Engineering Examiners. He holds an honorary Doctor of Science degree at the University of Delaware. Bob has a son and daughter, both of whom attended the University of South Carolina. His son, who received his S.M. in Civil Engineering from M.I.T. in 1950, is now supervising engineer for Columbia City Schools.

Jim Wolfson, Vice-president of Tishman Realty and Construction Company of New York, was the featured speaker of an all-day conference in Cleveland of the Construction Division of the Cleveland Engineering Society. His subject was "The Challenge in Future Business Construction." Jim's company will soon start construction of a 22 story office building in Cleveland.

Bill Dewey, manager of the Architectural and Engineering Division of Anderson-Nichols and Company, Boston, spoke recently at a Rotary Club Dinner in Manchester, Conn., his subject being the Texas Tower project, for which he was largely responsible.

It is with regret that I report the death of Dr. Robert T. Knapp, professor of hydraulic engineering at California Institute of Technology. He had been on the faculty there for a quarter of a century, and he conducted important investigations in the field of hydrodynamics.

Bob Bradley is back from South Dartmouth, Mass., to Waltham, Mass., address 26 Bedford Street. Lauren Hitchcock is

back in New York City, after his lengthy stay on the West Coast and more recently in Ontario, Canada. He may be reached at Apartment 3G, 35 West 92nd Street. Amasa Castor has left Manchester, N. H., for Ft. Lauderdale, Fla., the lucky fellow! Captain Harold J. Murray is also in Florida, address 4406 Sherwood Road, Jacksonville. John Downey is now living in Burtonsville, Md.

Here's wishing you all a happy and prosperous 1958! Please join me in thinking about and pointing toward 1960, when we should have our finest reunion. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

1921

Hola, Habana — Viene Veintuno! On Friday, February 21 next, a group of some 50 members of the Class of 1921, wives, and one son will arrive at La Habana to devote the next several days to the most unusual reunion party we have ever had and no doubt the most enjoyable, too. With the wise counsel and friendly hospitality of Helier Rodríguez and his colleagues of the M.I.T. Club of Cuba added to the planning and administrative accomplishments of Chairman Ted Steffian, Chick Dubé, and Roy Hersum of the committee for the 1921 Week End in Havana, no effort has been spared to insure a wealth of pleasure and comfort. Unique as a reunion gathering in a particularly lovely setting, it is also a trip which will long be treasured as a never-to-be-forgotten experience.

As of this writing — a couple of weeks before Christmas — you have received another letter from Ted and his committee outlining the program for the four days in Cuba and detailing travel and hotel arrangements. The American Express Company has been named official travel agent by the committee; and all reservations are being made through this agency, which has reserved rooms for our group in the three top Havana hotels. Since most of us will travel via one of the several air routes, the committee is also arranging for groups of classmates to meet in Boston, New York, and Miami so they may travel together. Correspondence from Helier Rodríguez indicates that all is in readiness at his end for a royal reception and the finest program anyone could desire. The red carpet is really out for the Class of 1921!

At this time in December, the list of attendees includes the names of 26 members of the Class, most of whom will be accompanied by their wives, plus one son: Ollie Bardes, Mich Bawden, Cac Clarke, Josh Crosby, Herb DeStaebler, Chick Dubé, Harry Goodman, Munnie Hawes, Roy Hersum, Dug Jackson, Irv Jakobson, Ivan Lawrence, Leon Lloyd, Bob Miller, Sam Moreton, Don Morse, Phil Nelles, George Owens, Leo Pelkus, Helier Rodríguez, Fred Rowell, Ray St. Laurent, George Schnitzler, Ted Steffian, Hank Taintor and Bill Wald. There's not much time left between the date you are now reading these notes and our take-off for the balmy climate of Havana. If you've just decided that you're not going to be left behind to miss all the fun and relaxation of this rare occasion, go after the

travel people right away and contact Ted Steffian at the address at the bottom of this column to let him know that you plan to be present. See you in Cuba!

Herbert C. DeStaebler answered our request for his latest news with a muchly appreciated letter. Herb says: "After Lambert's merger with Warner-Hudnut into Warner-Lambert Pharmaceutical Company I was appointed director of Purchases and Package Engineering for Lambert-Hudnut Manufacturing Laboratories, the proprietary and cosmetics manufacturing subsidiary in Lititz, Pa. Mrs. DeStaebler died in 1950 and my three children are all on the West Coast, where I visited them last summer. Stephen, Princeton '54, magna cum laude, is teaching at the Chadwick School at Palos Verdes; and my daughter, Jeanne, lives on the beach at Malibu with her husband and two lovely children, a boy of five and a girl, three. From the Los Angeles area, I went to San Francisco via Honolulu to see Herbert, Jr., M.I.T. '50 in physics, who obtained his doctorate at M.I.T. in 1954, also in physics. After a year working on cosmic rays at and for the Ecole Polytechnique in Paris and in the High Pyrenees, he is doing pure research at the High Energy Physics Laboratory at Stanford, where they have the longest high energy linear accelerator in the world.

"I spent a very happy evening with hospitable Hokey Miner (Grant L., Jr.) and his charming wife at Los Altos, where Herb, Jr., also lives. Hokey still has that infectious grin and lives a gracious life in his beautiful open home. He supplements his bread and beans money as president of a prosperous plumbing and heating supply business. He will still take on a general contracting job or anything else, so long as it doesn't interfere with his leisure. I gave him what information I could about various classmates but could supply nothing recent about Johnny Starkweather and nothing at all about Sammy Moreton. For their benefit, he looks extremely well, trim and happy." It's good to know that Herb will join us for the Havana class reunion.

To answer the questions Herb raises, Sam E. Moreton, Jr., President of the Central Lumber Company, Brookhaven, Miss., will also attend the 1921 Week End in Havana and it looks as though these two will have plenty to talk about. Sam and Mrs. Moreton have three children and four grandchildren at last reports. John B. Starkweather '22, President and Treasurer of the Starkweather Engineering Company, Newtonville 60, Mass., has fairly consistently advertised in The Technology Review the availability of his firm for engineering and constructing power and pumping plants as well as boiler, cooling water, and heat recovery systems. For the record, Grant L. Miner, Jr., is president of the Los Altos Plumbing and Heating Company. Herb has also sent us a detailed recommendation that the editor of The Review consider a means for drawing the attention of all Alumni to important or unique paragraphs of general interest throughout the Class Notes section by printing a small beaver opposite each of these paragraphs. We have forwarded this suggestion to our boss, Editor Bev Dudley '35. Whatever

the outcome, Herb deserves thanks and praise for his great interest in promoting the general welfare of M.I.T. and its Alumni.

While we certainly appreciate the many fine letters which arrive from members of the Class, it is particularly gratifying to get a fan letter from the wife of a classmate. Mrs. Sumner Hayward, Secretary of the Simmons Class of 1923 and a writer of considerable prominence, comments on our remarks about her class notes in a welcome message, with compliments we wish we deserved, which says, in part: "I am pleased to have your kind word about the 1923 column. One of the maddening things is the lack of space for class notes. For a lively class, like mine, it means that all items must be trimmed to the bone. Sometimes I find that all I can report in the allotted wordage are names and dates. To keep you abreast of what's rolling out of my typewriter, here's a recent article on one of my hobbies. The collection now numbers about 1,300 different post card views of libraries. You may be glad to know that Glen Ridge's library is among those in my collection. Idaho is the only state not represented. Know anyone there? Sumner says no one of the Class of 1921 is listed in that state, so perhaps it's natural that it should be so backward." Betty enclosed a most interesting article, entitled "The Picture Post Card — Off to a Good Start with Libraries," from the September, 1957, issue of *Hobbies — The Magazine for Collectors*. Once upon a time, we recall having saved and mounted picture post cards in albums with slotted pages and it is interesting to know that they are not only collectors' items but that, like postage stamps, there are specialized or topical collections. If you collect anything, you ought to read Betty's article to discover how someone with a most practical imagination has developed and expanded the art of collecting, — and made it so pleasant for others that they want to go all out to help. And if you know someone in Idaho, please ask them to obtain a picture card of a local library, have the librarian autograph it and mail it to Betty at 224 Richards Road, Ridgewood, N. J.

Ernest Henderson, President, and Robert L. Moore, Chairman of the Board, Sheraton Corporation of America, made front page news in the *New York Herald Tribune* and *Times*, as in most other papers of the metropolitan area, with illustrations in most cases of Ernie "swapping" a giant photograph of the Sheraton-Astor Hotel for one of the Ambassador Hotel, both in New York City. The exchange gives the Sheraton hotel chain a luxury hotel in New York's east side in addition to the other Gotham properties, the Park Sheraton, the Sheraton-McAlpin, and the Sheraton-Russell. Dr. George Thomson of Milton, Mass., assistant director of Fabric Research Laboratories, co-authored a technical paper for the Boston meeting last November of the American Association of Textile Chemists and Colorists, of which he is a member. George is an authority on the chemistry of paper and textiles who started his professional career as an instructor at Technology and then became a research worker at the W. B. Wescott Laboratory, before joining Wal-

ter Hamburger's world-famous research organization for the textile and related industries, whose modern plant in Dedham, Mass., adorns Route 128, the "Golden Circle." George is also a member of Sigma Xi and the American Chemical Society.

Ralph M. Shaw broke into print in one of our favorite trade publications, the *Houghton Line*, with comments on the geographical availability of pompano. Saul Silverstein spoke on "Operation Understanding" at a meeting of the Springfield, Mass., chapter of the National Association of Accountants. Saul and Rigi are receiving congratulations on the birth of their second and third grandchildren. Added to the Baby Beaver Band are David Jay Rubinovitz, son of daughter Phyllis and Samuel Rubinovitz '51, and Jon Alan Silverstein, son of Mr. and Mrs. Lee M. Silverstein, who also have a daughter, Leslie Joy, aged almost two. To Captain John D. Crecca, U. S. Navy (retired) and Mrs. Crecca of Elizabeth, N. J., our sincere sympathy on the passing of his father. The engagement has been announced of their son, John, Jr., and Miss Jodie Fischer of Charleston, W. Va.

Richard H. Morris, editorial director of *Plant Engineering*, spoke on "An Engineer's Observations in Russia" before various chapters of the American Institute of Plant Engineers in North Chicago, Ill., and in Nashua, N. H. During 1956, he spent a month in the U.S.S.R., visiting some 20 factories and numerous ministries and schools in the area from Moscow to Tiflis, including Stalingrad, Kiev, and Minsk. He also spent a month in Poland, Czechoslovakia, and Yugoslavia. Dick was associated with us in Course XIV following his graduation from California with degrees in mathematics and mechanical Engineers, the American Institute of world wars, a colonel in the Air Force Reserve, and a civilian consultant to the Department of Defense. His memberships include the American Society of Mechanical Engineers, the American Institute of Plant Engineers, the National Society of Professional Engineers, and the Society of American Military Engineers. He is also a past president of the American Society of Business Magazine Editors.

In several letters and a phone call, Class President Ray St. Laurent has advised that Dan Harvey and Dick Windisch accepted membership on Mich Bawden's Special Gifts Committee. Dick made a trip to Europe last fall. Pats on the back to Lark Randall, Chick Kurth, and Josh Crosby for successfully arranging and carrying out the most recent of the new 1921 special events requested by those who attended our 35th reunion. This was the 1921 cocktail party at the Faculty Club, preceding the Midwinter Alumni Association meeting in Cambridge on February 4. Mail notices were sent only to those in the local area. Arnold R. Davis writes from his new home, 95 Orchard Lane, Berkeley Heights, N. J.: "As Manager of Rubber Chemicals Research for the American Cyanamid Company, I moved with my laboratory staff and equipment from Stamford, Conn., to our new location in Bound Brook, N. J." Laurence O. Buckner also reports a new

home address at 817 Moffett Lane, York, Pa. John M. Giles now receives mail at 911 Live Oak Street, San Angelo, Texas. Dr. William R. Hainsworth reports his home address at 14854 Tamarix Drive, La Puente, Calif. Temporarily, Philip H. Hatch can be reached at 425 Pelham Manor Road, Pelham Manor, N. Y. New addresses, available on request, have been received for John J. McCloskey, Edgerton Merrill, Robert R. Thurston, and Raphael VanNeste.

Hola Habana — Viene Veintuno! Last chance to get aboard for the big doings in and around Havana from February 21 to 25. The next Class of 1921 gathering on the calendar will take place on Alumni Day on campus in Cambridge, Monday, June 16, 1958. *Hasta la vista!* — CAROLE A. CLARKE, Secretary, International Telephone and Telegraph Corporation, Components Division, 100 Kingsland Road, Clifton, N. J. EDWIN T. STEFFIAN, Assistant Secretary and Chairman, Havana Reunion Committee, 11 Beacon Street, Boston 8, Mass.

1922

Your faithful Secretary had to leave for the hospital to have a cholecystectomy performed while writing the notes for the January issue. Having successfully lost portions of anatomy and cash, he now rather weakly takes his pen in hand.

The above is only fooling because there was nothing to it and a good time was had by all. The big news is regarding the M.I.T. Club of New York Silver Stein Award Dinner. The Class of '22 was particularly proud to assist in this presentation to our famous Assistant Secretary, C. George Dandrow, Vice-president, Johns-Manville Sales Corporation. Those signifying their intention of attending the dinner included: Mr. and Mrs. Donald Carpenter; Mr. and Mrs. L. B. Davis; Mr. and Mrs. T. T. Miller; Mr. and Mrs. F. S. Lincoln; Mr. and Mrs. Clayton Grover; Mr. and Mrs. Duncan Linsley; Mr. and Mrs. Ronald Macdonald; Mr. and Mrs. S. H. Reynolds; Mr. and Mrs. Paul Ryan; Mr. David Minton; Mr. W. J. Edmonds; Mr. Fred Dillon, Jr.; Mr. Parke Appel; Mr. Thomas S. Craig; Mr. Abbott Johnson and daughter Joanne. Our President Parke D. Appel, who sent in the above list, said that he felt that it was an outstanding recognition most humbly received.

A letter from Dale Spoor in Chicago tells of the sudden death of John N. Du Vernet. He had had pneumonia but had been back at work before his final attack. He was a structural engineer with Naess and Murphy Co. in Chicago. We regret also to report passing of Rodmond S. Mahaffy of Wilmington, Del., last May. Change of addresses to new locations include: Roscoe E. Sherbrooke, 278 Jerusalem Road, Cohasset, Mass.; Norman J. Greene, 311 Irish Road, Berwyn, Pa.; Dr. Walter W. Boyd, Metropolitan Club, 1700 H Street, Washington 6, D.C.; Frederick S. Blackall, Jr., Taft Pierce Manufacturing Co., Lock Drawer 71, Woonsocket, R. I.; Edward L. Lincoln, 78 Cedar Street, Sharon, Mass.; Bartow Van Ness, Jr., R. D. 2, Biery's Bridge Road, Bethlehem, Pa.; Eugene P. Rowell, Jr., 1632 E. Wash-

ington Avenue, Pascagoula, Miss.; Arthur L. Pitman, 7 Summit Place, Alexandria, Va.

Donald F. Carpenter, general manager, Film Department, E. I. du Pont de Nemours Co. and former chairman of the Munitions Board of the Defense Department, has been named to an 11-man advisory committee to examine the nation's stockpiling policies and programs. The stockpiling of critical materials for defense purposes is now to be rearranged considering the entirely new concepts of warfare. This is not a new experience for Don, but it does show the high regard in which he is held in Washington. Morris J. Gorman has announced the formation through merger of the Clifford-Black Furniture Co. in Malden, Mass. His photograph in the local news bears out the story that he has built a reputation for energy, integrity, and efficiency.

The election of Fred C. Koch as a director of the Northern Natural Gas Company has been announced. Mr. Koch has been in the petroleum business for 35 years. He is president and director of the Wood River Oil and Refining Company, Rock Island Oil and Refining Company, and the Koch Oil Corporation, all of Wichita, Kansas. He is also on the boards of the First National Bank of Wichita, the Koch Engineering Company, Clover Oil Corporation, and Vance Oil Corporation, all of Wichita. He has extensive ranch and cattle interests in Montana and Texas. Winthrop F. Potter of Lexington, Mass., transmission and protection engineer for New England Telephone and Telegraph Co., served as chairman of Lexington Area #1 division of the United Fund Campaign. He had served as chairman of the Cancer Drive in 1957. He is a member of the Franklin Foundation and was formerly president of the Appalachian Mountain Club. Ray C. Burrus, Associated Consultants, Inc., has written an article entitled "Beyond Our Borders" in the November issue of *Consulting Engineering*. He tells of policy directive 9 in the Point IV programs where I.C.A. encourages private enterprise abroad. Next effort should be getting our Class together at the mid-winter meeting at the Institute.

Another time for a good get-together in New York is February 6 at the Technical Dinner Meeting of the New York M.I.T. Club, to be held in the Grand Ballroom of the Biltmore Hotel. An especially strong panel will discuss "Industry's Stake in Atomic Energy."

Your fully recovered and ambitious Secretary will be happy to receive additional news about you or members of our Class whom you may meet. Please send in frequently. — WHITWORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo 3, N. Y. C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Corporation, 22 East 40th Street, New York 16, N. Y.

1923

Penn Howland did such an excellent job with the class notes last month that we are thinking seriously of letting him take on the chore hereafter. Penn is always dependable, and he is doing a splendid job as chairman of the Reunion Committee.

All he wants from the rest of the Class is your support and your attendance at The Pines, Cotuit, Cape Cod, Mass., June 13 through 15, 1958.

Hugh S. Ferguson, XV, our well-known chemical executive, formerly of Dewey and Almy Chemical Co., has been elected to the board of directors of the National Research Corporation. While with Dewey and Almy, Hugh held the positions of treasurer, executive vice-president, and then president. When that concern merged with W. R. Grace and Co., he served as executive vice-president in charge of the chemical group. Early this year he resigned from active management, but he continues as consultant and director. He is a member of the Corporation of M.I.T., past president of the Alumni Association, and director of the American Synthetic Rubber Co. He lives in Belmont, Mass.; has a summer place on Cape Cod; and meticulously corrects your Secretary when the latter becomes a little confused about the dividing line between Osterville and neighboring communities. Congratulations, Hugh!

Whitney C. Huntington, IV, has been elected honorary member of the American Society of Civil Engineers, one reward for a lifetime devoted to the training of civil engineers, first as a teacher and later as an administrator. In particular, he brought great distinction to the Universities of Colorado and Illinois, with which he was long connected. Recently, his advice was sought by the U. S. Air Force in the building of its new academy. Among other things, he is author of the book, *Earth Pressures and Retaining Walls*. Another book, *Building Construction*, published in 1929, still remains a standard text for engineering and architectural students. He holds the Alumni medal of the University of Colorado for distinguished achievement, awarded in 1947.

The *Worcester Sunday Telegram*, on November 24, 1957, carried an inspiring story regarding Raymond P. Harold, XV, President of the Worcester Federal Savings and Loan Association. In part it was in commemoration of Ray's 30th anniversary with Worcester Federal, a bank whose assets rose from \$9,000,000 to over \$140,000,000 under his leadership. Among other things, he is a founder and past president of the National Savings and Loan League, past president of the Massachusetts Co-operative Bank League, and past president of the Northeastern Federal Savings League. Currently, he is a trustee of the Savings and Loan Foundation and also of the Executive Council of the International Union of Building Societies and Savings and Loan Association. He has played an active part in important civic work as chairman of the Worcester Housing Authority, which completed many housing developments throughout the city, particularly those prepared for returning G.I.'s and elderly citizens. Such achievements brought him the coveted Freedom Foundation Award. In a recent testimonial, City Manager Francis J. McGrath described Ray Harold as "one of the finest public servants Worcester has had."

June, 1957, notes related that Paul Heymans, VIII, former Belgium Minister,

had been appointed by the Vatican to be in charge of its project at the Brussels World Fair in 1958. Under Paul's able direction, 52 National Committees have now been established and work is actively going forward for the Vatican Pavilion, which will include a church of modern design and a portrayal of the Church's doctrines and morals by means of art and other activities.

General Hermon F. Safford, II, President of the Ohio Rubber Co., has been named "National Management Man" for 1957 by the National Management Association. Entering the Army in 1917 as a lieutenant, he rose through the ranks to brigadier general in 1942. He retired in 1946 to join the Ohio Rubber Co. He is also vice-president and director of Eagle-Picher Co., a member of the Advisory Council of the American Society for Quality Control, and a director of the Osborn Manufacturing Co. and of the Rubber Manufacturers Association. He was born in Leominster, Mass. (Herb Hayden, please note.)

Cards from W. A. Klikoff, XIII, indicate that he has returned to his old position as chief, Aircraft Engineering Division, Civil Aeronautics Administration, Los Angeles. Another card from Colonel H. H. Zornig states he has retired; and because he is tired of raking leaves and shoveling snow, he has moved to Florida. It is remarkable how these men give up the bracing air of a crisp winter morning in New England and forego the feeling of victory that comes after shoveling through two feet of beautiful white crystals, commonly known as "snow!"

Remember, we are expecting you at THE PINES, COTUIT, MASS., JUNE 13 to 15. Better start the sweet woman on planning her wardrobe so as to accompany you. — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 North Broadway, White Plains, N. Y. WENTWORTH T. HOWLAND, *Assistant Secretary*, 1771 Washington Street, Auburndale 66, Mass.

1924

Seems as though the Henningers broke open the winter vacation season. A card from "Fabulous Florida, the Tropic Inn and the sheltering palms" came away back in November. John evidently doesn't spend all his time being sheltered by the palms, however. There was a line about his love for the pink, sandy Daytona beaches.

Dent Massey has left New York to go back home to Ontario. He has been with American Machine and Foundry for some time, now takes over as vice-president, director, and general manager of their Canadian subsidiary, A.M.F. Atomics (Canada), Ltd., in Port Hope, Ontario. His immediate boss, the chairman and president, is General Walter Bedell Smith. A.M.F.A.(C.)L. develops and manufactures fuel elements for nuclear reactors, and will also be happy to take your order for a complete reactor. Dent, according to the announcement, "has won recognition as an outstanding speaker on the peaceful uses of atomic energy."

Another business boost, this one to Hartselle D. Kinsey. Sox has been with Union Carbide since 1924 and has been

a V.P. for the past three years. When they formed a new division recently, Union Carbide Olefins Company, Sox was tapped for the presidency. If you're in the market for a bit of ethylene, propylene, butadiene, or a host of other hydrocarbon products, he's your man.

Among the honors which are coming to Dr. Hudson Hoagland of the Worcester Foundation for Experimental Biology is one naming him "Man of the Year." Award made by the B'nai B'rith lodge of Fitchburg, Mass. A note from V. P. Cardinal chides your Secretary (in a nice way) for the lack of class notes in November. He has been covering up by explaining I had been "on tour." Actually it was on vacation instead, a belated one, and one that included very little touring. Paul and Jack Hennessy are fellow members of the President's Committee of Notre Dame. Have no idea what this means, whether it's fund raising or football recruiting. If the latter, they did all right this year.

The second '24 luncheon at the M.I.T. Club of New York brought out 14 men plus one ringer. Nate Schooler was accompanied by his newest assistant to the president, his son Jerry. Others were Al Anderson, Bill Correale, Griff Crafts, Bill Delehanty, Elko Honigman, Bill Kepplinger, Jim Grahame, Lou Porter, Gus Rudd, Pres Scott, Greg Shea, Howard Stevens, and Henry Tanck. Some regulars missing, no doubt for good cause, some new names there. All in all, a goodly turnout. The big Silver Stein dinner in November had "quite a few of our lads out in tuxedos and their ladies looking beautiful." A Cardinal quote. There were the Correales, Delehantys, Hennessys, Kinseys, Schoolers, and Winings. The Cardinals were not named, but how did Paul know how beautiful the ladies were unless he was there? Without benefit of female support were Messrs. Honigman, Kepplinger, and Stevens. Guess that about covers the opening of the New York social season.

In early December the first regional conference of the year was held in Pittsburgh. It was a smashing success, as would be expected of any show staged by Ed Hanley, the committee chairman. For many years George Knight has had a summer home in Hingham, Mass. It's on the water with immediate access to his boat. George found living on the water (or, at least, its edge) so much fun that now, in spite of commuting difficulties, he's making it his year-round home. Our President is not letting George forget he is chairman of our 35th reunion, two years hence. He has now asked him to appoint committee members. Don't duck now, if you're lucky you may get a bid.

You will be most sorry to learn of the passing of Charlie Phelps. He had not been in good health for some time. The end came in mid-November. To his family goes the deep sympathy of the entire Class.

This is the appropriate time to mention to you mid-winter travelers the annual M.I.T. Fiesta in Old Mexico. We still have a clipping reporting last year's high light: "The house and garden of Mr. Clarence M. Cornish, President of the M.I.T. Club of Mexico City, and Mrs. Cornish, near Coyoacán, was the scene of

the most colorful of all the events arranged in honor of the visiting M.I.T. Alumni. The Noche Mexicana began at 8:30 P.M. and lasted until the wee sma' hours of Saturday." Goes into detail about the native costumes, strolling musicians, breaking of the pinata, tempting foods, and so forth. Doesn't mention the tequila, dragon's blood, and other enlivening potables. There's no indication that this year Nish's garden will again be ravished in the name of hospitality, but you may be sure it will be a bang-up show. They're old hands at it by now. It's March 13 to 15, and if you can possibly make it, don't miss. Write: Clarence M. Cornish, Margaritas 139, Villa Obregon, Mexico DF 20, Mexico. Wish I could say I'd see you there! — HENRY B. KANE, *General Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

A news release to the afternoon newspaper of Thursday, November 7, 1957, noted that John M. Campbell, X, scientific director of the Research Staff of General Motors Corporation, had been signally honored by the Society of Automotive Engineers. He was presented with the Harry L. Horning Award for his scientific fuel-and-engine studies during a 31-year career with the General Motors Research Staff. The award is made annually by the Society of Automotive Engineers to the person who, during the year, contributed most to the study of fuels and lubricants in the automotive field. In his acceptance speech entitled "Looking Ahead in Fuels for Automotive Transportation," John presented interesting statistics which proved the fuel efficiency of the American automobile engine has increased approximately 50 per cent in the last 24 years.

Word was received from the Connecticut area that George F. Mahoney, I, has been named city engineer of Torrington. George is a licensed professional engineer; and for several years has been with the Connecticut State Highway Department, more recently having served as general superintendent for one of the large building companies. In addition to his duties as city engineer, he will have responsibility of supervising all public buildings.

The Lewiston-Auburn, Maine, newspaper pointed out recently that the Town of Wilton, Maine has an astronomy observatory with a sliding roof, this one being in the home of Cyrus F. Fernald, XV. The home and observatory were designed by him, and the original telescope which he used for nearly 25 years was built by him as well. He now has a new telescope; and with its 10-inch mirror of 60-inch focal length, he has already observed stars of 14.5 magnitude. Over the years, he has reported about 85,000 observations to the American Association of Variable Star Observers, of which he has been a member for 20 years.

It is with regret that we announce the death of Howard F. Smith, U. S. Marine Corps (Retired), who died early in November at his home in Scituate, Mass. Major Smith was a research engineer for the Bikini Hydrogen Bomb tests, and had served with the Army during World War

I and with the Marine Corps during World War II. He is survived by his wife and one son. — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

"The February class notes will be due December 12," so says the card; so here we go on an overcast Sunday morning at Pigeon Cove. We have had the usual distractions, such as watching the lobstermen making early morning rounds of their pots through the binoculars. I was a little surprised to see them out today because of a terrific "blow" this week that usually cleans out their gear. We were not here, but the first thing our friends told us was how the wind howled for 12 hours Wednesday night with gusts on local wind indicators up to 60 miles per hour from the northeast. There was no question about what had happened, because all of our windows were frosted with a thick deposit of salt. Fortunately, our house has but one story; so with a bucket of detergent, a long-handled brush, and a hose it only took 20 minutes to wash them.

I just noticed my handy man Gunner go by in his outboard-powered dory, so he must have a few lobster pots left. He leaves his old pots in late so the loss is small if they are wiped out. The day after the storm was brilliant sunshine with the seas still rougher than they have been for years — a photographer's heyday. I would like to have been here to take a few shots, for those I have seen taken by friends are terrific. But let's get on with the notes — we do have some interesting clippings this month.

One clipping from the *Springfield, Mass., Independent* gives an interesting resumé of George Leness' career in finance over a period of 30 years. The story carries an excellent photograph of George which we cannot reproduce, but we will give you the content: "George Leness, a Springfield native who heads the underwriting department of Merrill Lynch, Pierce, Fenner, and Beane in New York, is this year observing his 30th anniversary in the financial world. Leness was born here in 1903, graduating from M.I.T. as a civil engineer. He got his first Wall Street job in 1927 at Harris Forbes and Co., in that firm's buying department. The company was later merged with Chase Securities Corp., which in turn was liquidated. The buying department personnel of Chase Harris Forbes Corp. joined the First Boston Corp. Leness became a Merrill Lynch partner in 1944. In 1956 the Merrill Lynch underwriting department ranked second among the underwriting houses of the country in amount of business managed solely or jointly." Another shorter clipping from a Bell Telephone publication, I guess, contains an excellent photograph of Brad Young, and the clipping states: "Bradford P. Young, general personnel supervisor, Executive Personnel, is appointed assistant vice-president, Public Relations. Mr. Young began his career with the company in 1926, starting in the Traffic Department, Philadelphia."

Here is a story from the *Danbury, Conn., Independent* about Bob Chidsey.

Bob was recently appointed the first town engineer in Simsbury, Conn., after serving with the Connecticut State Highway Department for 31 years. Bob can be truly termed a Connecticut Yankee, being a native of Windsor, Conn., and his wife a native of Simsbury. Another Connecticut story tells of Eb Haskell's election to chairman of the Connecticut Industrial Development Council, an organization whose objective is to attract new industry to Connecticut. Eben, as you will recall, is manager of the Industrial Department of the United Illuminating Co. of New Haven. Sincere congratulations to all of the above classmates whose successes have made headlines.

Last summer when racing my Star boat in the Atlantic Coast Championships, I ran into Stew Perry on the float at Winthrop. Stew, in co-operation with Civil Defense authorities, had set up a radio communication hookup to follow the races closely. I just had a quick handshake on the float because it was several miles out to the racing area and we had to get under way. However, Stew wrote me a fine letter while on a European trip, and his letter was so interesting and full of ideas that I will quote most of it. I am sure you will enjoy it, too. Here goes:

"Alice and I are realizing a lifelong ambition of taking a self-conducted tour of Europe, which starts off with this leisurely, very nice voyage from Boston to Azores, to Lisbon, to Gibraltar, to Palermo and Naples, where we disembark two days from now. Brought some reading along to catch up, including *The Review*, and as usual turned to the 1926 column; and noting that I haven't sent you my post card, thought I would seize this spare moment. I received my 30-year pin from The Worthington Corporation this year and can say that I have enjoyed my work with them very much — which is sales engineering, my activities being about 90 per cent metropolitan, covering utilities, major consulting engineering firms, and special accounts. During this time Worthington has continued to prosper and expand, and there is a certain satisfaction to being a part, if only a small cog in a big wheel, of this fine organization.

"One of my hobbies, like yours, is sailing (from the Winthrop Yacht Club) with a small 18-foot 'Hustler' purchased in 1936 with two-suits of sails (then 16 years old) for \$250.00 and which, with good care and attention, I feel is as good, if not better than when I got it. This form of relaxation is superb for the summer months! My other and major hobby, ham radio, is still paramount, which, besides making many friends the world over, still allows 'New worlds to conquer' in the form of study and observations and tests on the 160 meter band, where a large portion of my spare time is spent organizing and conducting worldwide 'tests.'

"The fraternal side of ham radio is tops, too. For example, on this trip we will be met at Naples by an Italian radio Ham, IISCO, taken by him to visit Pompeii, Vesuvius, and Naples, and spend the night at his home. (This acquaintance was made over the air.) Then visits with similar Ham friends in Germany, DL220; Switzerland, HB9CM; France, F9AA; a

whole week with Pete Pennell, G2PC, in Wallington, Surrey, England. Peter's family and ours have grown up together over the last 24 years through Sunday morning schedules — every week, on either phone or code, excepting war years and poor conditions. It is going to be a real thrill to see and be with Peter; his wife, Betty; and Robin and Rosie, their children, whose voices we know so well but have never met. Thence, to Scotland, GM2BUD and Northern Ireland, G13IOS.

"We feel that the real privilege of this trip will be the meeting of these people in their homes and thus getting an insight which many tourists miss! Our trip is vagabond. We have no fixed reservations, either at hotels or for transportation (except over and back), and will make our way along as the situation dictates. One very important stop, however, is at Venice, where we will visit with our 26-year-old son, who is with the U. S. Air Force, first lieutenant jet fighter bomber pilot, at advanced base, at Aviano near Udine, 50 miles from Venice. He has a Volkswagen and will take us around and leave us at Munich. (Our other son, 23 years old, is at U. S. Air Force Training Base, Bainbridge, Ga., just out of Cornell — M.E. with honors — married and one little girl.)

"George, if you are thinking of such a trip as ours, can recommend this Italian line very highly (in spite of *Andrea Doria*). Never had such food — cheerful, pleasant, efficient service — good cabins — plenty to do and very nice on deck — 4,800 miles — a real cruise trip with stops at Azores, Lisbon, Gibraltar, Palermo and Naples. We are now skirting the coast of Algeria and came close enough to Algiers to get an excellent look at it. Yesterday peeked into Tangier, Spanish Morocco — was up in pilot house and had radar demonstration — in engine room and looked over their two 11,000 horse power diesels, and have spent hours in radio shack — 13 days all told for only \$305. Well, this is it, will be back at work only too soon. Stewart S. Perry."

We certainly have taken our share of the class notes space this month; but there's another month coming, so if you have an interesting experience to report, the Class will want to hear about it. Right now, we are going out to exercise our St. Bernard, Heidi, except we get most of the exercise. — GEORGE WARREN SMITH, *General Secretary*, c/o E. I. du Pont de Nemours and Company, Inc., Room 325, 140 Federal Street, Boston, Mass.

1928

At the time these notes are being written, responses from the first mailing of reunion plans are just coming in. The letter was sent out only 11 days ago and already 62 reservations are confirmed! This shows what a live Class we have and indicates that June, 1958, will see another outstanding and memorable '28 reunion! If your reservation is not in as you read these notes, please don't delay — this is one you can't afford to miss!

Some of the responses included items of news for which we are very grateful. Art Nichols enclosed a newspaper clipping announcing his daughter's wedding: "At St.

James Parish Church, Montego Bay, British West Indies, Miss Louise Bell Nichols, daughter of Mr. and Mrs. Arthur A. Nichols of Weston and Duxbury, was married to Senor Rodrigo Botero, son of Senora M. V. Botero of Bogota, Colombia, and the late Senor Botero. The Venerable P. L. Price, Archdeacon of Cornwall, officiated at the late afternoon ceremony on August 24, and a wedding dinner followed at the Chatham Hotel, Montego Bay." Louise was graduated from Mary A. Burnham School and Wellesley College, class of 1956. Her husband graduated from M.I.T. last year.

Bob Larson, Course IV-A, reports that he is still at McKiernan-Terry Corp., Dover, N. J., and is plant engineer at the Dover Plant. He has been with this company since 1942 and is associated with C. W. Shattuck '22, who is first vice-president. Prior to 1942, Bob was with Purdy and Henderson Co., New York.

We received a note from Everard Lester expressing his regrets. Daughter, Patricia, is married to a Navy man and the Lesters are going to Europe in June for a visit, and so will have to pass up the reunion.

A recent note in the *Petroleum Refiner* states that Dave Haynes, superintendent of crude oil, coking, and cracking at Tidewater Oil Co.'s new Delaware refinery, has been advanced to the newly created post of refinery superintendent. Dave has been with Tidewater since 1929; was named chief process engineer in 1947; transferred to Alhambra, Calif., in 1954, as a member of the group supervising the design of the Delaware refinery. He returned to Delaware in July of 1956. In his new post Dave will be in charge of all processing operations. Our congratulations to you, Dave, and best wishes for your continued success!

Your Secretary is in the painful process of changing homes — while the doubt remains whether the mail address is Larchmont, N. Y., or Harrison, N. Y., we suggest you use his office address given below.

With regret we must record the death (on June 2, 1957) of Henry Lee Burgess, who graduated in Course IV. The information was sent us by the administrator of his estate. — GEORGE I. CHATFIELD, *Secretary*, 100 East 42nd Street, New York 17, N. Y. WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

1929

Imagine 1929 class notes after a long pause, interrupted only by a few scattered editions. We have promised ourselves that we will have some notes in each issue from here in, but we must have the co-operation of you boys. Won't you write me, telling what you have been doing, whom you have seen, and what they are doing?

I talked with Brig Allen, who is now in Detroit with Reliance Electric and Manufacturing, a few months back. He reports all is well and is looking forward to the 30th reunion coming up in a couple of years.

We have not been able to reach John Wilson, but I am sure he would ask me to put a plug in for the 1958 Alumni Fund and urge you all to get your contribution in promptly. John, since reunion, has merged his Doelcam Company with Min-

neapolis-Honeywell, of which he is now a director. Except for his various directorships, he has, between us girls, retired to "sailing his 57-foot auxiliary ketch — *Western Star*. John sailed in the Bermuda race the year before last, in the Halifax race last July, and is entered in the Miami-Nassau race this month (February).

Joan and Wally Gale have spent five months in Europe recently, where their daughter Joan joined them in Rome for the recent Christmas holidays.

Kay and Eric Bianchi flew to Tacoma last October, where their son Dave was married. Time marches on.

Things are picking up and '29 now has four members on the Alumni Council: Eric Bianchi as class representative; John Wilson as club representative, Brussels; Frank Mead and Yours Truly as associates.

Sol Horwitz, who is general manager of West End Iron Works here in Cambridge, was recently elected a director of the American Institute of Steel Construction.

From recent press releases we learn of the following of our members' activities: Sam Levine has recently been named manager of General Electric's Aircraft Nuclear Propulsion Department at Idaho Falls, Idaho. Ludwig Hoffmann is chief of the Office of Ship Construction of the Maritime Administration, also recently appointed. Ken Garside, who is in the cranberry business here on Cape Cod, has recently been appointed acting general manager of the National Cranberry Association, with which he has been associated for some time.

I also hear that Hap Adkins has taken a leave of absence from the Institute and is on the staff of A. D. Little here in Cambridge.

It's going to take a long time to get around to all you boys, which I shall do eventually, but please don't wait for me to write you. Drop me a note, even though it may be short. — FISHER HILLS, Assistant Secretary, Dewey and Almy Chemical Company, 62 Whittemore Avenue, Cambridge 40, Mass.

1931

Word from Myrle Perkins tells that he is now with Bechtel Corp. as executive engineer. His new address is 2090 Broadway, San Francisco, Calif.

Gordon Brown, head of the Electrical Engineering Department, has been elected a director of the Institute of Radio Engineers for the 1958-1960 term, according to an article in the November 25 issue of *Electronic News*.

A clipping from the *Worcester Gazette* for May 9 — just received — reports that Al Ziegler has been appointed manager of the Palmer Plant of the Colorado Fuel and Iron Company. Al joined Colorado Fuel and Iron Company as metallurgist in 1933. As metallurgist, he was responsible for all chemical and metallurgical laboratory activities. He became superintendent of the high carbon wire mill in 1938, and directed the production of high quality carbon wire until his promotion to assistant plant manager in 1945. He is a registered professional engineer and a member of the American Society of Metals. As a father of two Girl Scouts and two Boy Scouts, he has taken an active interest in Scout lead-

ership and has filled several council and district Scout positions. He is also an ardent skier, hiker, and camper.

While in Camden, N. J., on a business trip toward the end of November, I spent a few minutes with Wendell Currier, who is director, Products Standards, Campbell Soup Company. Last year, he spent some time in Europe for Campbell — with the major part of the time in sunny Italy. Working with Wendell is another Tech man, Dick Foster '30. During the same trip, I had a very pleasant lunch with Al Coleman, who is with Radio Corporation of America.

Word has just been received of the death of Walter vanBenthuyzen on April 28, 1957. No details were given.

Changes in addresses received since the last class notes are: John H. Arnold, West Main Street, Searsport, Maine; Dr. Norman D. Fitzgerald, 1141 Butternut Street, Abilene, Texas; Leonard A. Schuttig, Box 1451, Annapolis, Md.; Lieutenant Colonel O. Glenn Goodhand, Jr., Army War College, Carlisle Barracks, Pa. — EDWIN S. WORDEN, Secretary, 9 Murvon Court, Westport, Conn.

1932

A number of clippings have come in since the reunion. We are very anxious that each of you keep us informed of anything interesting in your activities so that the Secretary can keep this column going. One interesting thing comes from Denver, where the firm of Frank R. Cook Company is located. Frank was a Course XVI graduate who was head of the production and experimental bombardment branches at Wright Field during World War II. He also served as head of the research division and the research and development plans division of the air staff in Washington, D. C. Until two years ago, he was director of aeronautical engineering, research, and planning for the Minneapolis-Honeywell Regulator Company. He founded his own firm in Denver to specialize in the design, development, and manufacture of electronic and aeronautical equipment. The newspaper article carried the announcement of some contracts for the fabrication and testing of major equipment for the thermodynamics laboratory for the new U. S. Air Force Academy.

Among the speakers at the fourth Annual Conference of the Atomic Industrial Forum, Inc., held in New York City last October, was Herbert Ross, XV. Herb is with the United Shoe Machinery Corporation in Beverly, Mass., and spoke on the handling crane and refueling tool manufactured by his company for the pressurized water reactors now being built for the generation of nuclear power.

Tom Rhines, IX-B, was recently cited for 25 years of outstanding service to the United Aircraft Corporation. Tom is now chief engineer of the Hamilton Standard Division. Tom has presented many papers on engineering subjects for professional societies and has been granted five patents on various phases of aeronautics. He was promoted to his present position on March 1, 1957, after having come up the long ladder from the very bottom in 1932. In addition to his engineering activities, he has been active in community affairs and

is presently a member of the Board of Education of his home town of Glastonbury, Conn.

Donald W. Feters, XVII, is another one who has been with the same company since 1932. He has just been elected president of the Gerhardt F. Meyne Company, construction engineers of Chicago. From the same city comes news of Ira Bach, IV, the commissioner of planning of the city of Chicago. The Chicago Dynamic Forum conducted a panel on the subject of the creation of buildings to revitalize cities, both to serve the individual and enhance his dignity and sense of freedom. Ira is a member of the Chicago Dynamic Committee, which is dedicated to the sound building and farsighted planning of the World's Most Dynamic City. So it says on the letterhead!

Authors are in the news with the third edition of *Modern Pulp and Paper Making* just published under the editorship of John B. Calkin. X. John is president of Calkin and Bayley, Inc., a firm of industrial consultants. He has written many articles in the paper field and has been active on many professional committees. Rolf Morral, XIV, has also published some information on the work of his new assignment. He is head of the Cobalt Information Center at the Battelle Memorial Institute in Columbus, Ohio. Rolf has published a number of papers recently on the technology of cobalt, a historical view of the "Mischievous Metal," and a bibliography and chronology of activities with cobalt since 2,500 B. C.

Other notes which have come to my attention show that Russell C. Praft, XV, has joined the firm of Sanders Associates, Inc., of Nashua, N. H. Charles H. Pierce, XVI, the supervising forecaster of the Weather Bureau at the Logan International Airport in Boston has been given a pin in recognition of 20 years of outstanding service to the Department of Commerce. Martin T. Meyer, XV, has been elected president of the Melrose Park Improvement Association in his suburban community outside Philadelphia. Alfred W. Halper, XV, has recently been awarded the American Home Citation Award and the Practical Builder "Oscar" for his 100-home development at Wayside Acres in Sudbury, Mass. The editor of the *American Home* magazine made the award to Al with the statement: "I know you will appreciate that this American Home Citation represents high honor indeed, awarded as it is by an eminent jury of judges representing a cross section of the entire building industry." Still on the subject of building, Albert G. H. Dietz, XVII, has been appointed chairman of the new Technical Studies Advisory Committee for the Federal Housing Administration. This Advisory Committee was established by the Building Research Advisory Board to analyze the problems which need study in the housing field and to make recommendations to the National Academy of Sciences for the inauguration of initial studies.

All of us will be saddened to know of the death of Joseph L. Thistle, V. Joe was president of C. Proessler and Son Company of Pittsburgh at one time and had recently been district representative of the Sheldon Equipment Company. Joe was a world traveler and had been a civic leader

in his town of Washington, Pa. He lived at Thistledown Farm with his wife, two sons, and two daughters. — ROLF ELIASSEN, Secretary, Room 1-138, M.I.T., Cambridge 39, Mass.

1933

According to the calendar, the snow should be melting and real spring weather cannot be far away. This means that you will be thinking about your summer program. Your Secretary wants to remind you again that your Class Committee has arranged a wonderful week end in Cambridge from June 14 through June 16. We hope that graduations, weddings, and other important family dates do not prevent your coming. If you can't make it for the full week end, please plan to be with us as long as you can.

Honors for the month go to Don Fink who was elected late last fall to the presidency of the Institute of Radio Engineers. Don is director of research at Philco. Don has an optimistic view of business for the coming year. Congratulations to Roland D. Glenn for his promotion to the vice-presidency in charge of development of the Bakelite Company, an affiliate of Union Carbide.

We are happy, too, to report the promotion of Richard H. Valentine to the post of chief engineer of the New Departure Division of General Motors. Also to George Vila, who has become a group vice-president of U. S. Rubber. Tucker M. Vye, the administrator of the Addison Gilbert Hospital in Gloucester, has been elected a director of the Gloucester Safe Deposit and Trust Company. Philip C. Rutledge, a partner in the firm of Moran, Proctor, Mueser, and Rutledge, has been elected a director for District 1 in the American Society for Civil Engineers.

Your Secretary can report that John Rumsey and Ralph Cross are in fine fettle. They have been working hard with representatives of the Institute in getting contributions for the Faculty Salary Program in the Detroit area. Morris Cohen, M.I.T. professor of metallurgy, was one of the four principal speakers at the Pittsburgh Regional Conference in December. Art Mason and Ing Madsen took an active part in running the Conference. Jim Vicary drove down with Mrs. Vicary for the Conference. Arthur C. Ruge has been appointed director of research and development of the Electronics and Instrumentation Division of the Baldwin-Lima-Hamilton Corporation in Waltham.

Recently in the news: Rodney D. Chipp, who is with Federal Telecommunications Laboratories in Nutley, N. J., is coauthor of a book entitled *Closed-Circuit TV System Planning*; Robert B. Mills, an architect in Richmond, Va. who has recently joined the Educational Council and is already at work interviewing candidates for admission to M.I.T. from his area; John Wiley, who was chairman of a meeting at the M.I.T. Club of New York at which Professor Hurd C. Willett of the Institute's Meteorology Department spoke on long-range weather forecasting. John is director of aviation for the Port of New York Authority.

Beau Whitton reports that all goes well in North Carolina. Cal Mohr continues to

send periodic letters with news of our classmates in southern Illinois. All of Clarence Westaway's friends in the Class will be glad to hear that Westy is almost completely recovered from a serious operation in the fall. Westy is a key man on your Reunion Committee and now threatens to eat more clams than anyone else in the Class at the shore dinner we are planning for Sunday, June 15. — R. M. KIMBALL, Secretary, Room 3-234, M.I.T., Cambridge 39, Mass.

1937

That was the last time I'm going to miss our class reunion. While I wasn't there, they elected me third assistant secretary of the Class. Planning ahead, Bob Thorson, Secretary, volunteered me to write this month's class notes. All I had to do was to sift through the mass of interesting letters from our classmates and write them up. Only no one wrote in. So I had to squeeze some news out of the few I reached by phone. Won't you guys PLEASE write — even if it's only a post card!

With about three dozen '37'ers in the northern New Jersey area, you'd expect that I'd see SOMEONE at meetings of the M.I.T. Club of Northern New Jersey (I'm house chairman and on the Board of Governors). But the only one I see regularly is the one and only, the ever faithful and dependable, Windy Johns.

Incidentally, Windy's Johns Manufacturing Company has come out with a new gadget to eliminate corrosion and sludge in fuel oil tanks. I have used his first invention — the anti-corrosion plug for auto crankcases — for many years; and although I don't know if I can credit Windy with it, just like he promised, my one car has over 70,000 miles and the other over 30,000, without needing any engine work other than an occasional change of points and tune-up. Of course Roz says it's because she's such a good driver.

Classmate Bill Arnold is located at Bell Laboratories in Whippany, N. J., as a supervisor in the Military Systems Engineering Department, doing missiles work. He's also chairman of the Communications Division of the New York Section of the American Institute of Electrical Engineers, and is a supervising instructor in the Army Reserves. In his spare-time he is cochairman of the Educational Standards Committee of the local community's Citizens Committee for Educational Planning. Bill mentioned seeing Johnny Doremus, who is chief engineer of Aircraft Radio Corp. in Boonton, N. J.

Cleon (C.C.) Dodge is in sales engineering with Tri-Wall Container Company. Living in Hasbrouck Heights, hard by Teterboro Airport, his hobby is flying. His children, aged six and seven, enjoy flying as much as he does. Cleon reports that he heard that his namesake — Charlie Dodge — is with G. E. in Cincinnati, working on turbojets.

Jack Robbins lives in Westfield, N. J., and is a production superintendent at American Cyanamid in Bound Brook. He also has two children, aged 14 and nine, and is still active in the Army Reserves.

Charlie Kahn has started his own air conditioning business in New York City, under the name Wyant Engineering Serv-

ice. He and Estella live in Teaneck, N. J., with their two children, Paul and Christine.

As for me, life has enough complications, both businesswise and otherwise, what with our first child Lisa Lynn aged six months (must be some kind of a class record), and our dog Teddy, who tells dirty jokes. — JEROME E. SALNY.

Jerry Salny has done an outstanding job on the above notes. Keep the letters coming to Jerry so that he can keep up the fine work.

Rutherford (Colonel) Harris writes: "What a salesman you are, Bob. Even such a poor correspondent as I cannot avoid replying." Oh, how I wish this were true, but maybe the rest of the Class will help the Colonel build up my ego. Colonel Harris also reports that he has been with the Mutual Boiler and Machinery Insurance Co. for almost 11 years, with the last two years in Cleveland as district manager. The Colonel, his wife Jane, and their two children live at 3662 Traynham Road, Shaker Heights, Ohio.

Just received a card from Duane Wood in which he reports: "Living in Pasadena, Calif., and am now vice-president of Operations for Lockheed Aircraft Service Inc., with operations in Japan, Honolulu, California, and New York, and now looking at possibilities in Brazil and Mexico." Sounds like a lot of traveling, Woody, to all those exotic places you read about in *Holiday*. The Woods — Duane, Beverly, and their two children — live at 869 Val-lombrosa Drive, Pasadena, Calif.

We continue our request for material for biographical sketches on the members of our Class. This issue those of us whose last name begins with either E or F are specifically urged to send the pertinent information about the different positions they have held; their family; books, pamphlets, or articles they have written; their Army career; clubs; travels; and so forth.

Our former class secretary and present chairman of our 25th reunion, Windy Johns, was born May 3, 1912, in Mansfield, Pa., the son of a prominent Pennsylvania attorney. Windy attended the local grade schools in Mansfield and then two and one-half years of State Teachers College, also located in Mansfield. Windy then went to M.I.T. and was graduated with the degree of Bachelor of Science in Mechanical Engineering. During his four years at M.I.T., Windy was consistently on the Dean's List and was, as we all know, our class secretary-treasurer. He was a member of the Theta Delta Chi fraternity and active in extracurricular affairs. Upon graduation, Windy joined the Research Corporation at Bound Brook, N. J.

The Research Corporation were manufacturers of electrostatic precipitators (machinery for removing particles from air) and smoke reducing equipment. Windy was assigned to the experimental research division. His job was to make an automatic gearshift from an ordinary mechanical gear shifting device. Windy stayed with this company until 1939.

He then joined the Atlantic Diesel Corporation, manufacturers of a sleeve valve type diesel engine for aircraft. Windy rose from layout draftsman to vice-president

in charge of manufacturing by 1944. Windy resigned from Atlantic Diesel at the end of the war, in 1945, to devote his entire time to perfecting a unit to solve the engine wear problem. The basement of the Johns' home in North Plainfield, N. J., became the scene of further development and the first home of the Johns Manufacturing Company. To support the costs of his experiments, Windy devised and sold a tool for the making of wooden dowels. The sale of this tool, called the Spee-Dowl, was the beginning of the Johns Manufacturing Company in April of 1946. Another product was introduced to the Johns line in March of 1949. It was a set of tungsten carbide-tipped wood turning tools. In the fall of 1949, Windy came upon the marketable answer to the engine wear problem. This was in the form of a magnesium alloy rod attached to the drain plug in the oil pan of an automobile engine. Windy placed this unit on the market under the name of Magna-Power, thus adding his third item to the Johns Manufacturing line; this third became the most important product of the company.

After having solved the problem of corrosion resulting from the acids in oil, Windy continued his experiments to solve the problem of corrosion in the cooling system. Further testing and experimentation proved a high-grade zinc alloy to be the answer, so a fourth product was added to the line in 1956, marketed under the name of Magna-Guard. The oil and cooling systems of the engine now protected, next step was to provide a product to neutralize the acids, gums, resins, and residues in the fuel system. Later in 1956, to complete the engine protection, Windy introduced his third Magna product into his line — called Magna-Pel. Windy had, from the introduction of the Magna-Guard, been experimenting and gathering data on the neutralizing effect of the magnesium alloy on storage tanks of gasolines, oils, and alcohols. He has designed and proven such an item and is ready to place it on the market. Windy is now in the process of promoting this last item and is busy with television shows, interviews, editors, reporters, and the like.

Along with his business activity, Windy has been active in the M.I.T. Club of New Jersey; Westfield (N. J.) Community Players; American Club, Mexico City; Kenyon Players (Plainsfield, N. J.); Society of Automotive Engineers; American Society of Lubricating Engineers; American Society for Testing Materials; and the Motor and Equipment Manufacturers Association. Also, Windy has written M.I.T. class notes for the past 20 years, and we all owe him a note of thanks for that labor of love.

On December 12, 1938, Windy married Alice Hall, and they have two girls, ages 13 and 15, and a boy 11 years old. The whole family attended our 20th reunion, and all had a grand vacation while at West Harwich.

The following changes of address have been reported to us: Colonel Howard E. Webster, Pac. Air Force, Box 67, A.P.O. 553, San Francisco, Calif.; Dr. John M. Andreas, 655 Elliott Drive, Pasadena 5, Calif.; Brigadier General Theodore A. Weyher, University of Miami School of

Engineering, Coral Gables 46, Fla.; Dr. Henry J. Rugo, 520 Oak Grove Road, Norfolk 5, Va. — ROBERT H. THORSON, Secretary, 506 Riverside Avenue, Medford, Mass. S. CURTIS POWELL, Assistant Secretary, Room 5-323 M.I.T., Cambridge, Mass. JEROME E. SALNY, Assistant Secretary, Egbert Hill, Morristown, N. J.

1939

Warren Evans has top of the column this time; and if you want to know why, just read the first paragraph of his letter: "I have been catching up on my reading, including *The Review*, while en route from Kansas City to New Orleans. Therefore I shall take advantage of your request to drop you a line RIGHT NOW. Here are some notes concerning classmates:

"(1) John Casey '40, XVII. John left American Airlines last year and is now associated with Dixon Speas, consultants to the aircraft industry. They maintain an office in the La Guardia Terminal in New York City and, in addition to other duties, run a travel agency in Manhasset, Long Island. I believe Mrs. Speas heads up the latter. John and June have a very pleasant home in Manhasset and have three youngsters: Janet (four), Daniel (eight), and John (10). John, Sr., is on the Board of Governors of the M.I.T. Club of N.Y.C.

"(2) Dave Bartlett makes his home in Tulsa, Okla., where he and his brother have their own oil and gas operation. Perhaps this will persuade Dave to write in and give an accounting of himself. Dave is still a bachelor and active in M.I.T. affairs. (3) Dr. John R. Brown has been active in our Kansas City M.I.T. Club. I noted in Sunday's paper that he had resigned as V.P. of the Spencer Chemical Company and is now V.P. in charge of research for Procter and Gamble.

"(4) C. Phil Epifano is vice-president of the E. and F. Construction Co. and an officer in the M.I.T. Club that serves Fairfield County, Conn. Phil is married and has a family. (5) Ray T. Barbera is in your own backyard, out in the San Fernando Valley, married, has several children, including twins. I last saw Ray in 1956 when he was with Air Research Division of Garrett Co. Believe he is still with them.

"(6) Dick Muther, XV, '38, is the spark plug and president of our local Club. He has his own company of management consultants, and he and Louise live near us in Kansas City. Yours for longer and more frequent class notes! Signed: Warren Evans, XVII, '39."

Well, classmates, you can imagine how a newsy letter like that warms the cockles of the heart of a man who struggles once per month over a hot typewriter board. But rather than dwell on this theme, let's get on with reports of more classmates — there is lots of news this month.

Oz Stewart didn't write. He didn't telegraph. He came! Hilda and I were delighted to have him as a house guest during November, when he made a quick swing through L.A. Oz is editor of *Building and Facilities* for the magazine *Factory Management and Maintenance*, and in addition to other duties selects, annually, the top 10 new factories, writes them up, and presents their stories in the

May issue each year. It's easy to see why this is a great thing for industry and why it keeps Oz busy.

Oz has been on the cold steak and chicken fricassee circuits for about 10 years, as he has been active in trade groups and has gotten to be a public speaker of no small renown. However, at home he probably doesn't have much chance to get words in edgewise. Not that his ever-livin' Lucille (formerly Wellesley) wouldn't encourage him to have his say; but his four daughters, ages two, four, six, and eight, probably give him a good earful each night when he finishes his one-and-one-half hours' ride from Grand Central to Darien, Conn.

Phil Bush was still busy as ever in Oakland, Calif., when I saw him in December. Phil heads up Kaiser for Atomic Energy, has just finished one big project which was built in Idaho, and is now supervising the activities of a couple of hundred engineers on another Buck Rogers project. For a guy who has generated a lot of hot air and some power from ordinary carbonaceous fuels, I find it difficult to grasp the new atomic energy concept; but I am glad that Phil and a number of his colleagues have the whole situation well in hand.

"Hats Off" to Eli Danenberg, who has just been appointed director of carbon black research at Cabot. The announcement listed Eli's activities and said: "He is a member of the Rubber and Colloid Chemistry Divisions of the American Chemical Society, the American Institute of Chemistry, The Institute of the Rubber Industry (London), and the Society of Plastics Industry. He is a member of Sigma Xi, the author of numerous technical publications, and holds a number of patents in the field of clay, rubber, and plastics technology."

Bill Babcock has been appointed North Carolina's first director of highways. In announcing the appointment Governor Hodges said: "This is one of the rare occasions when the job actually did seek the man." Bill is executive officer of a 9,000-man department which will spend \$390 million in the next two years. His appointment is for five years, and if he spends money at that rate for the whole term we'll be tempted to leave our traffic-bound freeways of Los Angeles and take a trip to North Carolina.

The public release went on to say that Bill has taught at North Carolina State and was appointed full professor in 1952. He has been consultant for about 35 different North Carolina communities; belongs to Chi Epsilon, the national scholastic fraternity in civil engineering, and was its national president from 1954-1956.

Bill's wife is the former Jane Sweet of Massachusetts, and they have three children: Susan, John, and Sarah. They are members of the Carolina Country Club and are active in a number of community projects.

The article went on to say: "Based on his wide experience, Babcock commented that 'the State and municipal governments are going to have to work together to solve rural and urban traffic and transportation problems for the mutual benefit of all.'" Bill, the whole Class joins me in extending congratulations to you on this

appointment, and the politicians of the Class join me in suggesting that you just don't say things like that in speeches that are made after heavy banquets.

A quickie from Cleveland reports that Lawrie Fabens, 22276 Douglas Road, Shaker Heights 22, Ohio, has joined Booz, Allen, and Hamilton, management consultants. Lawrie is located with their Cleveland group.

Reevan Spiller is doing some wonderful work. Here's what a Boston newspaper said about him on November 4: "Reevan Spiller of Cambridge, Comptroller of Associated Jewish Philanthropies, Inc., will serve as group chairman of social services in the public service division of the United Fund Campaign, Joseph P. Healey, area chairman, announced today.

"Spiller, who is on the board of directors of Cambridge Mental Health Association, has served in the Red Feather, Red Cross, Salvation Army, and Combined Jewish Appeal campaigns for 15 years, and is vice-president of the Cambridge Jewish Community Center. A graduate of M.I.T. and Harvard, he and his wife Gertrude live at 77 Kirkland Street, Cambridge, and have four children; Naomi, eleven; Nathaniel, eight; David, five; and Rachel, four."

Dr. Harold L. Smith has been appointed assistant superintendent of the roll coating division at Kodak Parks Works of Eastman Kodak Company. Harold lives at 510 Oakridge Drive, Rochester, N. Y., with his wife and three children.

Robert B. Gordon has been appointed project engineer, Sheldon Nuclear Facility, by Atomics International Division of North American Aviation. Bob was formerly associated with Bettis Atomic Power Division of Westinghouse, as manager, core engineering department, and now lives at 19322 Superior Street, Northridge, Calif.

Mortimer Schultz is now treasurer of the American Nuclear Society. Mort designed the control system for the reactor on the submarine *Nautilus*, and in December, 1955, published a book, *Control of Nuclear Reactors and Power Plants*.

Maxwell Coutts is the new president of the Society of Industrial and Cost Accountants (Canada). Through its 10 provincial affiliates he becomes spokesman for 5,800 members in the field of financial management. Vice-president of manufacturing, Sangamo Co., Mr. Coutts will oversee executive development courses and, in co-operation with 22 universities, take over responsibility for the administration of a four-year course leading to the degree of Registered Industrial and Cost Accountant.

Francis W. Sargent is commissioner of Natural Resources for Massachusetts. Francis is making lots of speeches before chambers of commerce, Kiwanis, and so forth, and, in October, told of a vast program of land acquisition and recreational area development. His speech was well documented with statistics and fact. (Example: "Recreation and travel are the Commonwealth's third largest industry, and our program will help preserve the natural beauty and shoreline of our state, so we can maintain and improve this source of state revenue.") Francis, when

Bill Babcock revisits Boston he may be wanting to proselyte your ghost writer to beef up a speech or two.

Joseph L. Hewes, Jr., was appointed staff assistant to the assistant treasurer of the Nashua Corp. He is president of the Bay State Chapter, Systems and Procedures Association of America, and lives at 9 Hancock Street, Nashua, N. H., with his wife and son David.

Captain E. R. Tilburne, U. S. Navy, is stationed at Mare Island Naval Shipyard, Vallejo, Calif., and is currently Planning Officer and engaged in design and construction of submarines.

Dr. Lloyd P. Hunter, manager of Physical Research Department of the International Business Machines Corp. Research Center, has received a one-year leave of absence from his research duties to accept an invitation to spend a year at the Philips Gloeilampenfabrieken, Natuurkundig Laboratorium, Eindhoven, the Netherlands. (If it were me going over there instead of Lloyd, it would take me the whole year to learn how to write my own return address.) Anyway, the Doctor and his family will reside in Holland, where he studies physics and physical research administration.

Now, coming in to the last news item of the column, I can report a message from the Alexander Botts of the Pacific Northwest: Nils Rosenberg'40. Nils and wife (formerly Janet Davidson) and two youngsters left Seattle in November for 10 weeks or so in Norway. I know Nils isn't too fat, so I'll guess that if he isn't too old, he'll be looking up Olie Rustad'40 and the two will be headed off on a skiing junket.

And now, as the red ball of a sun sinks slowly into the west and as the red hot bearings of my typewriter cool, I'll take up my old post at the mailbox, and will look forward to getting lots of Christmas cards and some more news from you all. — HAL SEYKOTA, Assistant Secretary, 416 Calle Mayor, Redondo Beach, Calif.

1940

Your Secretary received a letter from Louis Rosenblum'42 advising that Al Katzenstein'42 had reported that Lieutenant Colonel Harry Bush had been living in New Rochelle, N. Y., for the past year between overseas assignments. Harry has served in Alaska and just recently was assigned as port commander for the Port of Tripoli. His address is A.P.O. 231, c/o Postmaster, New York.

In connection with the Alumni Drive this year, I have had the opportunity to speak with several classmates. Frank Libman advises that for the past nine years he has been managing the Coca Cola plant in Westminster, Md. Frank is married and has three boys.

Leigh Noyes is a group engineer in the structural division of Glenn L. Martin in Baltimore. He has three girls and a boy. The latter is 17 and is thinking possibly of going to Tech. If he does, I believe he will be the first member of the second generation of the Class of '40 to go to the Institute. Leigh also advises that Mike Scalia left Martin in June and is now with General Electric in Lynn, Mass.

Dave Morgenthaler, who was formerly

vice-president of Delavan Manufacturing Co., has been elected president of Foundry Services, Inc., the American affiliate of Foundry Services Limited of Birmingham, England. Dave is now situated in Columbus, Ohio.

Charles De Mailly has been appointed manufacturing assistant to the vice-president and general manager of Plymouth Cordage Industries, Inc. Previously, he was assistant manager of J. C. Rhodes and Company, Division of Plymouth Cordage.

Bernard Stiff has been appointed manager of United Shoe Machinery Corporation's atomic power department. Previously, he had been chief mechanical engineer at High Voltage Engineering Corporation.

Saul Namyet is the co-inventor of a road planning system developed at Tech. The system involves the use of electronic computers, and it is estimated that it will save millions of dollars in future road building. The use of the computers and three-dimensional aerial photographs provides the basis for the electronic road planning.

John Dickson writes that he is still a colonel in the regular Air Force and at present is assistant deputy commander, Research and Development Headquarters, Air Research and Development Command. John and his wife, Betty, have three boys and at present are living in their own home, which they have built in Annapolis, Md.

From Harry Orpen comes word that he has been appointed regional sales manager for Bell Helicopter Corporation, covering eastern Pennsylvania, eastern New York, Delaware, Connecticut, New Jersey, and New England.

Walter Palmer writes that he is now production superintendent of the Johns-Manville Products Corporation in Manville, N. J.

Fred Mann, Jr., has been appointed supervising architect of the University of Washington by the Board of Regents. He will be in charge of the development of the University's building program. Previously he was with the Seattle architectural firm of Young, Richardson, and Carleton and has been a partner in an architectural firm in San Rafael.

John Dwyer is now manager of the Design Engineering Department of M. W. Kellogg Company. Formerly, he was manager of Administrative Engineering for the same company. John lives at 17 St. Paul's Place, Garden City, Long Island.

Don Ross has been elected national director of the Society of Chartered Property and Casualty Underwriters. He is an assistant secretary of the Phoenix of Hartford Insurance Companies. — ALVIN GUTTAG, Secretary, 7515 Granada Drive, Bethesda 14, Md. SAMUEL A. GOLDBLITH, Assistant Secretary, Department of Food Technology, Room 16-325, M.I.T., Cambridge 39, Mass. MARSHALL D. McCUEN, Assistant Secretary, 4414 Broadway, Indianapolis 5, Ind.

1941

Seven of us (Ed Beaupre, Herb Klein, Walt Kreske, Ed Marden, John Sexton, Reid Weedon, and the Secretary) met for

lunch one day at the Faculty Club to talk over class affairs, and we reached the following decisions: (1) to try to get a better response on information for the Class Register; and (2) to hold an informal reunion the first week in March. The event will be in Boston, but will definitely be open to any and all who would like to attend. If you have even an outside chance of being around here then, please let me know, and I'll provide you with the latest intelligence on the situation. The plans won't be firm until after The Review deadline, so I can't pass the word through the column, but will have to do it by mail or phone.

With regard to the Register, the number of responses to our first questionnaire has been disappointing; we have, therefore, decided to recanvass those who didn't answer the first card. By now, all of you should have received at least one card; if you've been putting off answering it, don't delay! If you've lost the card, the information we want is simply this: full name, nickname, wife's first name, home address, course number, employer, position, type of business, and business address. Take a minute, jot it on a card, and send it to me. The more complete our information, the better the Register.

After lunch, one of us asked prexy Ed how his family was, to which he casually replied that he and Natalie were the parents of a boy, Steven Louis, born October 3, weight six pounds three ounces. A more calm and collected new father would be hard to find. We suspect that his victory in the diaper-pinning contest at the 15th reunion has gone to his head. Our hearty congratulations, Ed.

The Secretary has gladly accepted an invitation to serve as an associate member of the Alumni Council. Also a new associate member is Davis R. Dewey; regular members already serving include Reid Weedon (vice-president), Ed Beaupre, and Ed Marden. I attended the November 25 meeting and found it most enjoyable. The details of the proceedings will be found elsewhere in The Review.

Bill Ahrendt is now chairman of the board and treasurer of Integron, which is a new corporation formed from the personnel and facilities of the company formerly known as Eastern Associated Engineers, Waltham, Mass. Lew Fyke is now assistant to the director of marketing of American Machine and Foundry Company in New York. He says: "Fascinating job due to diversity of companies, products, and marketing requirements. Still not used to commuting by the New Haven, but otherwise like the East very much. Have joined the M.I.T. Club of New York, and am looking forward to renewing friendships with '41'ers in this area."

Stan Smolensky is at present project manager in the missile systems division of the Raytheon Manufacturing Company in Bedford, Mass.

Remember: get your vital statistics to us for the Register; and write if you have a ghost of a chance of being around here for the 17th reunion. — IVOR W. COLLINS, Secretary, 28 Sherman Road, Wakefield, Mass. HENRY AVERY, Assistant Secretary, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1942

Albert F. Clear, Jr., of Newtown, Conn., has been elected a vice-president of the John B. Stetson Company and designated as its shirt production manager. Al was formerly an assistant vice-president of the Stetson firm and was plant manager of its Mallory Hats operation in Danbury. He joined Mallory in 1947 and served in various capacities until his promotion to plant manager several years ago. Stetson, which has its main offices and hat-making plant in Philadelphia, recently moved the Mallory finishing operation there. It has also been diversifying its lines, adding various items of men's wear under the Stetson label. Al, Jerry, and their two boys will be moving to Philadelphia shortly.

We also note with pride that Dr. Frank A. McClintock, Associate Professor of Mechanical Engineering at Tech, is the recipient of a 1957 James Clayton Fund Prize from the Institution of Mechanical Engineers in London, England. Frank's prize, which includes a small honorarium, was awarded for his paper on "The Growth Of Fatigue Cracks Under Plastic Torsion" presented at the International Conference on the Fatigue of Metals in London in September, 1956. A further honor has come to Frank in his appointment, along with Professor Ippen of the Institute, for three-year terms to the Committee Advisory to the Office of Ordnance Research of the National Academy of Sciences National Research Council.

Akbar F. Brinsmade has joined the Celanese Corporation of America as a senior process engineer in the Chemical Process Engineering Department of the company's textile division in Charlotte, N. C. He will be engaged in recommending textile division process improvements and additions as well as in the economic evaluation of new and existing projects. Akbar formerly was president and managing director of Promotora Nacional Industrias, South America, Caracas Venezuela. He graduated from the University of Wisconsin and then took his master's degree at the Institute. The Erie Resistor Corporation has announced the appointment of Dr. James G. Buck as director of Research and Development. Dr. Buck was previously associated with Sylvania Electric Products, Inc., where he was section head of Thermionic Research. In his new position, he will direct physical, chemical, electrical, and mechanical research, and also basic new product and process development. James did his undergraduate work at Dartmouth before coming to Tech for his Ph.D. After work at the Institute in solid state physics, he joined Westinghouse Electric Corporation and later held an assistant professorship at the University of Notre Dame.

Theodore Q. Eliot has joined the Technical Division of the Texas Butadiene and Chemical Corporation in Houston, Texas, where he will assist in process design, economic studies, and new project evaluation. Ted was formerly process supervisor at Amoco Chemical Corporation's Brownsville plant. He had been with the Standard Oil Company of Indiana and its affiliates since 1946 with major responsibilities in the development of hydrocarbon

synthesis processes and the recovery and utilization of chemical products.

Just before deadline date, we received a nice note from Monroe R. Brown telling of his promotion in the Electronics Division of the Curtiss-Wright Corporation. He is now manager of Planning and Scheduling for the Electronics Division, which is located in Carlstadt, N. J. Some postcard returns tell us that Norman F. Lacey is now living in New Jersey. He is chief forecaster (meteorologist) for the National Weather Forecasting Corporation, a new company in applied forecasting. A similar card from Edward J. Bacon reports as follows: "Have new job, new home, new baby. Now Section Chief with Emerson Research Laboratories, Washington, D. C. Have moved to the country into a house we subcontracted and are still finishing up. New baby is Ann H. Bacon, born February 4, 1957."

From the Navy, we learn that Commander Donald H. Kern is project officer for nuclear submarines in the Bureau of Ships, Washington, D. C. He spends a considerable number of hours at the Electric Boat Division in Groton, Conn., where "I find many M.I.T. Alumni hard at work on the design and construction of the nuclear fish." Captain H. C. Maynard, U. S. Navy, reports that he is now concerned with operational evaluation of new guided missiles for fleet use. We record here and congratulate Thomas F. Connolly on his promotion to captain in the Navy. He is now stationed in Holland, Mich.

On a somewhat less serious maritime note, Stan and Thelma Golembe report that their delightful cruise on the *Ocean Monarch* to Bermuda and Nassau was made even more enjoyable by re-reuniting with Betty and Bob Imsande and their two daughters, Beverly and Barbara. It apparently did not take much persuasion to get our classmates to pose, relaxing in deck chairs, wearing their 15th reunion berets and reading the Technology Review. We hope that some of you living in the Pittsfield, Mass., area may prevail upon Bob to give us a more detailed fill-in on his intriguing antique car restoration and demonstration activities.

From the records of the Alumni Office, we note that five classmates have left the state of Maryland in the course of just one month. Richard Fay has come to Falmouth, Mass., from Cheverly. Captain William C. Fortune left Bethesda to join Douglas Aircraft in El Segundo, Calif. Captain Scott K. Gibson left Bethesda for Lakeland, Fla. Gustav W. Heinz, Jr., formerly of Towson, is now with the Martin Company in Orlando, Fla. The long distance move for the month also originated in Bethesda. It was made by David R. Lawler, who is now living in Honolulu.

The very latest address of our much traveled classmate, Charles R. Stempf, is immediately south of the border. Charlie is with the Worthington Company and is currently in Mexico City, more specifically at Insurgentes Sur 132, Ramon Guzman. Franklin M. Cist is now at the Asheville School in Asheville, N. C. Commander Alex F. Hancock has recently moved to Norfolk, Va. Ralph G. Mork has been transferred by I. B. M. to the I. B. M. World Trade Corporation with offices at

807 United Nations Plaza in New York City.

Best wishes from all four of us for lots of snow in the north country for the skiers and lots of sunshine in the southern states for those who take their winter vacations somewhat less strenuously. — ED EDMUNDS, Albuquerque, N. M.; BOB KEATING, East Alton, Ill.; JACK QUINN, Hawthorne, Calif.; and LOU ROSENBLUM, Secretary, Photon, Inc., 58 Charles Street, Cambridge 41, Mass.

1943

Latest news from Frederick Dickson reveals he is living in Kennett Square, Pa., having just moved to the Wilmington area from the Atomic Energy Commission plant in South Carolina. Fred is still with Du Pont in their engineering department, and is doing consumer research testing of items which his company buys in large quantities. Bill Holway's family firm, W. R. Holway and Associates, moved recently to new quarters in Tulsa, in conjunction with two large engineering feats which the firm is working on. One is a \$35 million hydroelectric project for the Grand River Dam Authority; the other is a \$40 million water supply system for the city of Tulsa. That's civil engineering with a capital C, and Tech should be proud of its three Holway graduates who are in this consulting engineering work.

Keith Rumbel, who received his master's degree in chemical engineering with our Class, has been elected a vice-president of Atlantic Research Corp. in Alexandria, Va. Before joining Atlantic in 1951, Keith was with Texas Co., on the M.I.T. Faculty, and with Bethlehem Steel. These notes will reach you about four months prior to our 15th reunion. The mailing which you received, and I hope answered, with the questionnaire, will give the committee a good indication of what to plan on for the affair. Remember the dates: June 13 to 15, at Cape Cod. — RICHARD M. FEINGOLD, Secretary, 49 Pearl Street, Hartford 3, Conn.

1946

A recent clipping from a New Haven newspaper brings us the following news. John A. Gunnarson has been appointed acting assistant to the president of the M B Manufacturing Company of New Haven, Conn. He will be engaged in evaluating and developing interdepartmental communications, filling a need arising from rapid expansion of M B's facilities and personnel in production, engineering, and sales. John has been factory manager in charge of the manufacture of vibration test equipment in M B's Plant Two for over a year; during his previous five years at M B he initiated a plant-wide industrial engineering program and, as assistant to the general manager, developed M B's profit-sharing plan. He was graduated from M.I.T. in Mechanical Engineering and, after two years at Westinghouse Electric International Co., received a master's degree in Business Administration at Harvard Business School. Ned A. Spencer has recently been appointed engineer-in-charge of the new Smithtown Laboratory of Wheeler Laboratories, Inc.,

122 Cutter Mill Road, Great Neck, N. Y. Ned joined the staff of Wheeler Laboratories in 1948 and has been associated with the development of many microwave components such as antennas, rotary joints, oscillators and tunable filters. In his new position he will supervise the consultation and development activities of the new microwave antenna facility.

Lewis T. Mann, Jr., is on a post-doctoral fellowship at Harvard Medical School, working on the immunological aspects of tissue transplantation. Lewis was married recently, and the Manns live at 28 Beals Street, Brookline 46, Mass. Richard Adler writes from 1109 State Street, New Orleans 18, La., to report the recent arrival of Laura to the Adler clan. Ralph H. Berman has left Radio Corporation of America and has returned to Boston to make his home at 48 Greycliff Road, Brighton 35, Mass. Ralph now works for Bromfield Associates doing industrial engineering and management consulting. As of this writing he is engaged to Miss Edith Cohen of Montreal, Canada, and the wedding is set for December, 1957.

Peter Sluis, Jr., is a technologist working on the economics of manufacturing processes for Shell Oil Co., in New York. Pete is married, has three children, and lives at 7 Hobart Court, Rochelle Park, N. J. Edward J. Bacon is a section chief in the Armaments Department of Emerson Research Laboratories in Washington, D. C. His job is the design and development of ordnance electronics. Ed and his wife Martha are presently living at 2226 Wash Avenue, Silver Springs, Md., but by the time you read this they may have moved into a ranch house they are building on a large lot in suburban Maryland. They are doing some of the work themselves, and subcontracting the rest. Anyone interested in part-time work will be cordially received.

Warren H. Turner is district traffic manager for New Jersey Bell Telephone Co., in charge of dial- and operator-handled telephone service in northern Hudson County and eastern Bergen County. Warren, Lee, and children Pamela and Cynthia live at 49 Pierson Road, Maplewood, N. J. Robert W. Gardner is an engineer in the Engineering Division, Cryogenic Process Design Group of Arthur D. Little, Inc., 30 Memorial Drive, Cambridge, Mass. Dr. Warren H. Chapman has recently opened his office at 314 East Holly Street, Bellingham, Wash., to start in his private practice of urology.

William H. Peirce has recently moved from East Lansing, Mich., where he was assistant professor of mathematics at Michigan State University, to Connecticut to accept a job as mathematical analyst in the Research and Development Department of the Electric Boat Division of General Dynamics Corp., Groton, Conn. Before going to Michigan State, Bill earned his M.S. in mathematics in 1951 at the University of Wisconsin. Then he taught one year each at Tabor Academy, Marion, Mass., and at Williams College. Then he earned his Ph.D. in Mathematics in 1956 at Wisconsin. In 1954 he married Charlotte Beebe of New Rochelle, N. Y., and in 1956 son Daniel arrived. After seven years with Lehigh's Institute of Research,

Preston Parr has become associate dean of students at Lehigh University. The Parrs have three children and live at Biery's Bridge R. D. # 2, Bethlehem, Pa. After receiving his Ph.D. from M.I.T. in 1951, Robert B. Davis was with the Mathematics Department of the University of New Hampshire, then was with International Business Machines as a 704 programmer, and now is associate professor of mathematics and education at the University of Syracuse, Syracuse 10, N. Y.

We are slowly working our way to the bottom of the big pile of questionnaires you all sent in last year. There are still enough left for the next few months of articles. For instance, next month we will start right off with news of Chuck Wellard, Winchell Hayward, John Pollard, and many more. However, if you haven't seen your name here for quite a while, or if you haven't sent some news in since about last May, then why not take a moment right now and drop me a line? — JOHN A. MAYNARD, Secretary, 15 Cabot Street, Winchester, Mass.

1948

At this writing, the plans for our big 10th reunion have sufficiently jelled so that we can report to you an outline of your committee's preparations. Our 10th reunion will take place June 13 to 15, at the Curtis Hotel in Lenox, Mass. All wives are invited. The Curtis Hotel has a new, heated swimming pool and a large, private patio. Free tennis and golf privileges are available nearby. This should be a memorable affair. Working hard in your behalf are such members of the Class as Bob Mott, who will serve as banquet toastmaster; Dave Cist; Jim Adelstein; Bill Katz; Bob Bliss; Joe Yance; Ben Bretler; Ken Brock; Dick Harris; Frank McGowan; and Ronnie Kallman.

By the time this is published, you may have received your Class Questionnaire, which has been designed to poll the Class for statistical information which will be compiled along with biographical sketches in a report to be published later this year. While your class notes column is no place for an advertising "pitch," I think it would be extremely interesting to all of us to know what has happened to our classmates in these 10 years since graduation, both individually and as a group. Ben Bretler is acting as chairman of the Questionnaire Committee and Herb Kindler is co-ordinating the group's overall activities. Your contribution to this questionnaire will facilitate its ultimate success.

No news has been received since our last issue of the notes, except for one most interesting note from Marty Billett. He writes as follows: "Amy was born last month and the boys, Clifford and Larry, are two and three-and-one-half, respectively. I am in the product development laboratory of Owens-Corning Fiberglas. Did you know that Bob Bliss was a Sloan Fellow this year? Bob is with the nuclear products group in Shoe Machinery, Lynn, Mass. Harry Jones was at the '57 reunion also. He is with Mollenbeck and Co., a management consultant in the area of new product development. I am still a gad-geteer at heart. My present assignment is to

develop a tire cord from Fiberglas yarn. Initially we are only aiming at developing a cord satisfactory for reinforcing pressure hose and V-belts. Fiberglas is a dynamic company, and you are probably familiar with its growth. I hope to be a part of the continued expansion that management expects."

Since there is no other news, we'll just repeat the reminder that our 10th reunion is June 13 to 15 at the Hotel Curtis in Lenox, Mass. — We'll see you there. — WILLIAM R. ZIMMERMAN, *General Secretary*.

I guess last month's request for additional news was taken quite seriously by all! I find myself swamped this month with promotion announcements and position changes, so here goes . . .

W. M. Wells has left the University of South Carolina and is now at the University of California Radiation Laboratory, via a summer job with the Institute for Defense Analyses in Washington, D. C. Lieutenant Commander William R. Porter advises he has transferred to the Bureau of Ships, Washington, D. C.

Harry Bing-You has changed positions and is now with G-V Controls, Inc., as project engineer. We hear from W. Stewart Brauns, Jr., that he is now a member of the New York Stock Exchange, operating as a "Two-Dollar" broker.

Charles Mastroeni reports that he has met many M.I.T. grads in his travels through South America, as sales engineer for the Charles A. Schieren Company. He was formerly associated with the General Electric Company. Charlie's new job has already taken him to Cuba, Mexico, Venezuela, Colombia, Ecuador, and Peru. His many friends will be delighted to know that Charlie reports he is still single, but "losing ground fast!" Let's hope he decides to take the fatal step before the 10th reunion. He would be especially happy to hear from Arthur Teager'49.

Commander Spencer Reitz, U. S. Navy, has transferred from Pearl Harbor Naval Shipyard to the Office of the Supervisor of Shipbuilding, U. S. Navy and Naval Inspector of Ordnance, New York, as design officer. John R. Lamarsh is now an assistant professor of engineering physics at Cornell University, giving a course in reactor physics and nuclear engineering.

Russell Paulnock advises that he has resigned his commission in the U. S. Air Force and has accepted a position as section head, Systems Development, Guidance Department, Lockheed Missile Systems Division, Sunnyvale, Calif. Since Russell received his master's degree in Aeronautical Engineering in 1953, he has spent three years as section chief, assistant section chief, and project engineer in the Weapons Guidance and Flight Control Laboratories at Wright Air Development Center, and one year as an instructor in graduate guidance and control course at the Air Force Institute of Technology at Wright-Patterson Air Force Base.

Lieutenant Colonel N. M. Bengtson is now deputy chief, Research and Development Liaison Branch, American Ballistic Missile Agency, Huntsville, Ala. He was formerly chief, A.B.M.A. Field Office, with the Bureau of Ordnance, Washington, D. C.

We have been advised that, on June 1, 1957, Howard L. Caterson joined the firm of Booz, Allen and Hamilton, management consultants, as a consultant, based out of Cleveland, Ohio.

The following information came to us by means of news clippings. Philip R. Marsilius has been appointed president of the National Tool and Die Manufacturers Association. He is executive vice-president of Producto Machine, Bridgeport, Conn. Lamson Corporation has announced the appointment of Earl D. Hoyt as Cleveland regional manager for the firm. His duties will include the supervision of the sales, installation and engineering of Lamson Systems in Indiana, Ohio, Michigan, Kentucky, West Virginia, and western Pennsylvania.

Victor H. Pomper has been elected vice-president of Hermon Hosmer Scott, Inc., Cambridge, Mass. Victor will continue to be a director of the corporation, and will be responsible for overall marketing, manufacturing, and personnel activities. Howard N. Smith has been appointed administrative assistant to the president of the New England Confectionery Company. Howard was formerly vice-president and treasurer of Dario-matic Inc., Los Angeles, Calif.

John F. Matthews has been elected executive vice-president of Forstmann Woolen Company, with headquarters in the Passaic Plant. John was formerly with J. P. Stevens and Co. Francis E. Jablonski has recently assumed the duties of research physicist on the staff of General Motors Corporation in Detroit, Mich. Frank was formerly an assistant nuclear physicist with the National Research Laboratories in Washington, D. C.

The last of our news clippings advises of the election of Martin Lubin as moderator, by the executive committee of the Citizens Committee for the Lexington, Mass., schools. Martin has three children in the Lexington schools, and thus brings to his new position a personal, as well as an academic, interest in the problems of the schools.

As for news in general, we would like to advise that one of our classmates, Glenn W. Stagg, has done us a great honor by recently being selected by the award organization committee of Eta Kappa Nu as one of the nation's three outstanding young electrical engineers. Glenn is presently associated with the American Gas and Electric Service Corporation of New York City. Our heartiest congratulations to you, Glenn!

Burton F. Judson, who is a member of General Electric Company's Chemical Processing Department at the Hanford Plant in Richland, Wash., spoke at the Governor's Safety Conference on November 21. His subject was centered around the use of radiation as an industrial tool.

Malcolm W. P. Strandberg, Associate Professor of Physics at M.I.T., spoke at the Philadelphia Section Meeting of the Institute of Radio Engineers on November 6, 1957. His topic was, "Problems and Possibilities with Microwave Quantum Mechanical Amplifiers." — R. H. HARRIS, *Assistant Secretary*, 26 South Street, Grafton, Mass. WILLIAM R. ZIMMERMAN, *General Secretary*, Moraine Paper Company Division, West Carrollton, Ohio.

A brief note of thanks to those of you who took time out to write notes and tell us of your doings. But there are still hundreds of others from whom we would like to hear.

A note from Long Island, N. Y., announces the opening of the office of Bentel and Bentel. Two of our classmates opened their own office for the practice of architecture. Maria Azzarone Bentel entered with our Class in 1946; but being a course IV major she received her Bachelor of Architecture in 1951. Frederick R. Bentel received his master's degree in Architecture in 1950 with our Class (Bachelor of Architecture from Pratt Institute in 1949 and Ph.D. in Architecture from Technische Hochschule in Graz, Austria, in 1953.) In August, 1952, Fred and Maria were married and both received Fulbright Scholarships; Maria, to Italy; and Fred, to Austria. They returned to the United States in 1953 and worked in New York on various architectural projects, the most famous of which was the Restaurant on the Mountain at the Motel on the Mountain in Hillburn, N. Y. (This was written up recently in *Life* and *Time*, as an example of Japanese-influenced architecture in the East.) In 1954 Fred started teaching in the School of Architecture of Pratt Institute in New York City, and he is still on the staff there. On June 13, 1957, Paul Louis Anthony Bentel arrived on the scene to make Maria's days a little busier, and then two weeks later Fred and Maria opened their office of Bentel and Bentel for business. A big year for the Bentels. Maria's sister, Lucille, is married to another '50 man, Bob Cesari. They are now living in Winchester, Mass., and expected their second child before Christmas. Bob went on to Harvard Law School after Tech, and after a couple of years he has returned to set up his own law practice in Cambridge.

Roger Graham received his Ph.D. from Chicago in 1953 and has been working for Rohm and Haas ever since, currently in their Bristol, Pa., laboratories doing research in polymer chemistry with emphasis on materials related to Plexiglas. He was married to Polly Anderson in June, 1950, and has one daughter, Dana Marlowe, born April 21, 1957.

Mario Abbate is now with Curtiss-Wright Corporation, Research Division, in Quehanna, Pa. News comes from another one of our co-eds. Natalie Adelman is married to Captain Traub, assigned to the 97th General Hospital in Europe. William Backer is with the Grinding Machine Division of Norton Company in Worcester, Mass. Richard Bersin is with Tracer Laboratories, Inc., in Waltham, Mass. And John Currie is diamond hunting in British East Africa with Williamson Diamonds, Ltd.

J. J. Earshen left Buffalo, N. Y., to head west to Ann Arbor, Mich., to join Systems Division of Bendix Aviation Corporation. Ken Eldred left Wright-Patterson Air Force Base, dropped the lieutenant from his title, and joined the Western Electro Acoustics Company in Los Angeles, Calif. Mrs. Sonja Gross (the former Sonja Keller) is teaching in the Chemistry Department at Simmons College here in Boston.

Walter Laird, Jr., is in Wilmington, Del., with the Research Division of the Film Department of E. I. Du Pont de Nemours, Inc. Donald Lea is teaching at Exeter Academy in New Hampshire. Paul Slepian received his Ph.D. and is working at Hughes Aircraft Company in Culver City, Calif.

Marriages still dominate a section of the news column. William Bakemeyer married Carla Jean Peterson on July 6, 1957. Thomas Cerwonka and Kathleen Veronica Heanue were wed on May 4, 1957. Tom is now with Hercules Powder Company in Port Ewen, N. Y. Earle W. DuBois and Margaret Mary Duggan said "I do" on May 25, 1957, in Bronxville, N. Y. Earle is an engineering consultant with Westinghouse Electric Corp. in New York.

Phyllis Buckner became the bride of Robert Meisel on June 29, 1957, at Garden City, Long Island. Bob and Phyllis took a wedding trip to Europe and are now living in Cambridge. Bob is vice-president of Meisel Press Manufacturing Company of Boston. Peter Palmer and Jeanne Marie Norton were married on April 27, 1957, at St. Mary's Church in Dedham, Mass. Pete is at M.I.T. as a project leader in the Instrumentation Laboratory. Fred Lorenzen, Jr., was married to Janet Fiedler in Needham, Mass., on June 15, 1957.

Paulo Castillo, Jr., is working on computer applications in both the business and scientific fields for Sperry Rand UNIVAC data processing machines. After seven years in industry, Charles Dickinson has decided to take up education as a hobby again. He has therefore moved (with wife and kids, Clarice, Steve, and Cheryl) to Pasadena, where he is attending regular sessions in the Graduate School at California Institute of Technology in Aeronautical Engineering. Lenny Lann sends in his back history to keep us up to date: "1950 to 1954 with Worthington Pump Company. 1954 to 1955, Harvard Business School. Two years with the United States Air Force; and since October, 1957, with Martin Company as industrial engineer in Baltimore, Md."

Chuck Lusher left Scovill Manufacturing Company in Waterbury, Conn., and is now with Texas Instruments, Inc., in Dallas, Texas, as a process engineer. Albert Rader was with American Cyanamid Company as medical representative, but left and is now doing graduate work in chemistry at the University of South Carolina. Charles Register (an Army Ordinance Student at Tech) left the Army in October and is now at the Burroughs Research Center in Paoli, Pa. Curtis Snow '51 is working as project manager for Consolidated Constructors, general constructors building the new Topsham Air Force Station in Maine. Joseph Volonte is now assigned to the Navy ballistic missile project, Polaris, in the Guided Missiles Division of the Chief of Naval Operations.

Just a reminder to all of you that living out in the country we have Rural Free Delivery and a large Sears and Roebuck Regulation Mailbox with room for lots of mail. How about filling up the mailbox with news from you? — JOHN T. WEAVER, Secretary, 24 Notre Dame Road, Bedford, Mass.

1951

Once upon a time, our class notes were pretty thick with announcements of weddings and engagements and all, but that kind of news is scarce these days. It could be that most of us are married off, which would immediately lower the odds on matrimonial statistics. Sometime we will have to plot a curve, "per cent married versus time," or some such. Anyway, the only wedding announcement in this issue is for Steve Chamberlin, who was married to Jean Catherine Fink in Cincinnati on November 30. Our best wishes, Jean and Steve.

There is, however, more information about offspring, and that's a comforting sign. It indicates that we won't run out of things to put in this column just because our friends have stopped getting married. Dan Sully, for instance, reports three children and another expected in April. Dan is plant manager for Sierra Electronics in California. He mentions that Jim Banister and his wife are expecting their first child; also that Jerry Levine is back in the United States after two years in England and is still single(!).

Gordon Rampy, living in Chillicothe, Ohio, and doing physical chemistry research for Goodyear Atomic, now has two sons. Jeff, the older, is two, and Bruce is only a few months old. Gil and Helen Stevens have a son, Robert, who was born in September. They have a new home in Port Chester, and Gil is working for Standard Vacuum in White Plains. Vern Pfanku and his wife Sylvia also have a new home, which Vern says is "on the edge of the smog belt" in Granada Hills, Calif. Vern is sales manager for Lockheed, and, they too, have two children, Kristin and Eric.

A card from Morley Kahn mentions that Marv and Joanne Grossman have a very cute daughter, Julie, who is slightly more than a year old by this time. Morley himself is at Harvard Business School, after working first for Specialloy, Inc., then for Morabisi Mining Company, and then putting in some time at Frankford Arsenal. Aaron Brody, food technologist at Whirlpool Corporation's research laboratories, moved into his new house at Benton Harbor, Mich., this fall. He mentions that he has had visits from Ed Olney and Hal Rich recently.

A card from Art Wasserman, Idaho Falls, Idaho, says: "Working on doctoral thesis at the National Reactor Testing Station, in the employ of Phillips Petroleum Company, Atomic Energy Division, under co-operative arrangement with M.I.T. Have enjoyed Yellowstone Park, Sun Valley, Mt. Rainier Park, and so forth, on brief sojourns with my wonderful wife, Shiela. Warmest season's greetings to all good friends of '51."

Lee Rohde is with the commercial and industrial air conditioning department of General Electric at Montclair, N.J. After two years of work on a new gas furnace development, he is currently assigned as a product quality engineer, concerned with product quality and performance in the field. Doug Kaufman, who got out of the Air Force in July, is with Nuclear Metals, Inc., in Cambridge. His two years in the Air Force were spent at Pratt and

Whitney's aircraft nuclear propulsion project in East Hartford. Glenn Mackey is now assigned to the F-105 project office at Wright-Patterson Air Force Base. Leigh Secrest left Convair this fall to join the Babcock and Wilcox Company's atomic energy division as special technical assistant to the manager of the physics and mathematics department.

John Ross was promoted to associate professor of chemistry at Brown in September. Among the Tech men who delivered papers at the American Society of Mechanical Engineers-American Institute of Chemical Engineers Heat Transfer Conference in August was Miguel Rivas, who co-authored a discussion of two-phase two-component flow in an ejector with condensation. And the Acoustical Society of America's fall meeting, which featured over a dozen papers by M.I.T. Alumni, heard one by Moise Goldstein on the detection of beats in repeated bursts of tone.

In the audio field, which is a subject dear to the hearts of some of us, there was recently an address presented to the Audio Engineering Society's annual convention by Dan vonRecklinghausen, chief research engineer for H. H. Scott, Inc. Dan pointed out in his address that loudspeakers as now designed allow too great a variation in impedance with frequency and therefore fail to comply with certain inherent limitations in amplifier design. He suggested a range of tolerance for speaker impedance variation which would prevent the impedance mismatch from becoming serious at any particular frequency, though he closed with the gloomy note that it may be a while before speakers which comply with his recommendations are available.

As a last item, our hats are off to Fred Weitz, who is a gentleman of rare talent. We never met a man who had more finesse in asking us to part with our cash. When Fred levers us loose from a few more dollar bills for the Alumni Fund, he manages to make the parting a real pleasure. Write us another letter soon, Class Agent. — RICHARD W. WILLARD, Secretary, Box 105, Littleton, Mass. ROBERT S. GOOCH, Assistant Secretary, Freese and Nichols, 407 Danciger Building, Fort Worth 2, Texas.

1956

Sociologists have a popular theory that scientists are very withdrawn and devoted only to their profession. It is felt that they should be fed a large dose of humanization early in their career. I would like to cite a very large example to the contrary of this theory. Prior to 1948, there was a small farm town on the Tennessee River in western Kentucky whose population had dwindled to a few hundred. Led by Pennsalt Chemicals Corp., several chemical and metal firms have built over \$100 million worth of plants along the river. With these plants has come a large influx of scientific personnel. The engineers average about 50 to 60 work hours a week and would be somewhat justified in retiring to their home and family in the evening.

Not so with these unguided eggheads. They have become the civic leaders of

the area, and to name a few of their outside jobs you will find: ministers, church officials, city councilmen, city planners, musicians, children's and youth group leaders, educators, sportsmen, club leaders, armed forces reservists, and people doing any other challenging job that requires problem solving. As a matter of fact, these imported recluses are more active socially and civically than the original residents. Through their work a modern residential community is growing in a land where crops seldom did. Oh yes, of course, Tech has several Alumni there.

Did you miss this one? There is an excellent report on the Alumni Officers' Conference in the November issue. It brings to light many of the problems the Institute will face in the future and how it intends to solve them with your help.

Word has come of another death in our group, Albert VanNostrand in November.

On rereading some of M. P.'s letters from last spring, I have found a wealth of information. Hank Valcour is working at Bethlehem Steel's Sparrows Point shipyard. Sam Singer is with Aurora Gas and Electric in Detroit. Anthony Praznik is with Bethlehem Steel. Hans Hoeflein and Don Robinson are with Electric Boat. Carl Slenk, Les Sigman, George Somekh, Bob Pollard, and Ed Najjar were in Course X graduate school. Nick Newman was in Course XIII grad school.

More recently Avraham Berkovits was married to Ella Ruben of Roxbury in September, 1957, and is working for the National Advisory Committee for Aeronautics at Langley Air Force Base, Virginia. Harry Heath was wed to Joan McGarry of Hamden, Conn., in January, 1958. Clark Weissman became engaged to Marcia Kline of Los Angeles last fall.

Jim Wilson is an instructor in mechanical engineering at the University of Rochester. Bob Brigham is studying on a Fulbright grant at New South Wales University in Sidney, Australia. Bob and his wife are busy telling the Australians about the wonderful life at Tech. — **BRUCE B. BREDEHOFT**, *Secretary*, 1528 Dial Court, Springfield, Ill. **M. PHILIP BRYDEN**, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, P.Q., Canada.

1956G

The professional activities of M.I.T.'s graduate Alumni are more important now than ever before for national security and to enhance the nation's scientific reputation. In this respect, M.I.T. has achieved particular recognition in the dramatic appointment of Dr. Killian as scientific advisor to the President. We offer congratulations. Certainly, to take example from him is to render true professional service to the world as we should.

It is particularly gratifying to learn of the successes and accomplishments of our graduation mates. M.I.T. proudly claims R. Dewey Rinehart, a graduate of Rensselaer Polytechnic Institute, who ventured to Tech under a Sloan Fellowship. Since academic days, Dewey has been with the Rocket Division of Bell Aircraft Corp. His promotion to the director of engineering for the Rocket Division is a laudable achievement. John Zotos, a former graduate student in Metallurgy, has recently

been credited with a method to produce low-cost titanium. At an open house, held earlier this year by the Watertown Arsenal, John was seen in charge of an interesting exhibit on new metals. Another fellow graduation mate, Thomas Hodne of Cleveland, Ohio, presented an outstanding new idea at the annual Indianapolis Home Show. As the *Indianapolis Star* reported: "The house for the Indianapolis Home Show this year was selected from 300 plans submitted in the fifth annual Indianapolis Home Show Architectural Competition. . . . Centerpiece house in the show was planned for flexibility, for adaptation to changing family needs."

Another fellow student, Peter Griffith, prepared and gave two informative papers at the August Heat Transfer Conference at Pennsylvania State University, having the titles of "Bubble Growth Rates in Boiling" and "Correlation of Nucleate Boiling Burnout Data." A plan devised by Melvin Levine, who is a career consultant on municipal traffic problems, has considerably eased parking difficulties and in turn increased business in Framingham, Mass. Lieutenant Merwin Sacarob has been awarded the designation of superintendent of construction for the Navy's new supercarrier, the U.S.S. *Constellation*. He served in a prior capacity as machinery superintendent during the construction of the U.S.S. *Saratoga*. Merwin is a U.S. Naval Academy graduate, class of '49. He holds the degree of Naval Engineer from M.I.T., having finished the three-year Navy-sponsored program in Naval Architecture.

Social obligations are still being filled in the smart manner by our graduation mates. Barbara Smart is Mrs. Roger Letts after her marriage in Mountain Lakes, N. J., this past summer. Roger "prepped" at Yale before taking on the task of laboring for the S.M. in Chemical Engineering at Tech. Both are leading a gay Bohemian life at 200 West 14th Street in New York City. Barbara teaches school, while Roger is an American Cyanamid executive in Rockefeller Plaza. His bride negates the story that Wellesley women aren't domesticated, for she turns out an excellent dinner, complete with homemade English chutney. A recent M.I.T. marriage took place in Andover, Mass. Eugene William Friedrich was wed to Miss Gael Grant. Mr. Friedrich was in the Building Engineering and Construction Department at M.I.T. His three-year tour of duty with the U.S. Air Force ends in November, 1959, after which he plans to return to Turner Construction Company as job engineer. Dick Hillsley, at present a candidate for the Sc.D. in Mechanical Engineering, was married to Miss Audrey Heinsohn of Rockville Centre, L.I. Cornell claims his undergraduate loyalty. Dick was the recipient of a Fulbright fellowship, had gone to Germany on it.

Edwin Goldberg has joined the Guided Missile Research Division of Ramo-Wooldridge Corp. in Los Angeles. He did his graduate work at M.I.T. in Electronic Engineering. Donald Gardner has not reported his company affiliation but can be corresponded with at 200 Ridley Boulevard, Toronto, Canada. Robert Laudise is a chemist on the staff of Bell Telephone Laboratories in Murray Hill, N. J.

Apologies are respectfully submitted because this column has not been very regular in appearance. Lack of information is not the reason. On the contrary, much news has been communicated, which is a welcome sign. The noble intentions of your correspondent have been watered by many location changes with the U.S. Navy, but now we are permanently settled. If you by chance are in the vicinity of the U.S.S. *Saratoga*, to be in the Mediterranean this year, come aboard and pass the time of day with us. — **Ensign Charles T. Freedman**, *Secretary*, Swulant, U.S. Naval Air Station, Norfolk, Va.

1957

Among those we saw in New York over Christmas and New Year's were Art Schultz, Ralph Brown, and Hank Salzhauser. Art is currently an M.B.A. candidate at the Harvard Business School; Ralph is working for his M.S. in Chemical Engineering at the University of Michigan; Hank is at Tech in the Graduate School of Industrial Management. Bob Wrigley writes: "Already an M.I.T. 'whole man' and getting wholer by the minute. I am now a middler at the Theological School, St. Lawrence University, Canton, N. Y." Bob was engaged last June to Gloria Deming of San Luis Obispo, Calif. We have at least one other theologian in our Class in Terence Wieting, who is currently working for his S.T.B. at the Harvard School of Divinity.

Sandy Bernhard's ship was in this port recently and we had an opportunity to get together for dinner. After graduation, Sandy worked for the Caterpillar Tractor Co. until he joined the Navy. Upon completing Officer Candidate School, Ensign Bernhard was assigned to a ship doing 'snark fishing.' Apparently his task force anchors at the end of our guided missile range, some x thousand miles from Cape Canaveral, and waits for the test missiles to land. They then fish them out. For Sandy, after New York, the next port is Rio and two weeks in Brazil.

Marriages: Barnet Weinstein to Sandra Taymore on February 15 at Temple Israel, Swampscott. Sandra graduated from Boston University this January. After a honeymoon trip to the Virgin Islands, Barney and Sandy will return to the New Jersey area, where Barney is employed as a sales engineer in the Electronics Division of the Monroe Calculating Machine Co., which recently merged with Litton Industries. Barney's best man was Jerry Collen. Another Massachusetts wedding, this one in Chestnut Hill, was the December wedding at Alan Godes to Phyllis Feldman of Brookline. Ron Delaney was best man, while Art Schultz and Dick Bloomstein were ushers. After a Miami Beach honeymoon, the Godeses moved to Philadelphia, where Alan is a graduate student at the Wharton School, University of Pennsylvania.

The next several editions of this column will emanate from the pen of Marty Forsberg, so please keep up the correspondence to both of us. So far it has been terrific. — **ALAN M. MAY**, *Secretary*, 55 East End Avenue, New York 28, N. Y. **MARTIN R. FORSBERG**, *Assistant Secretary*, 8 Forest Street, Cambridge, Mass.

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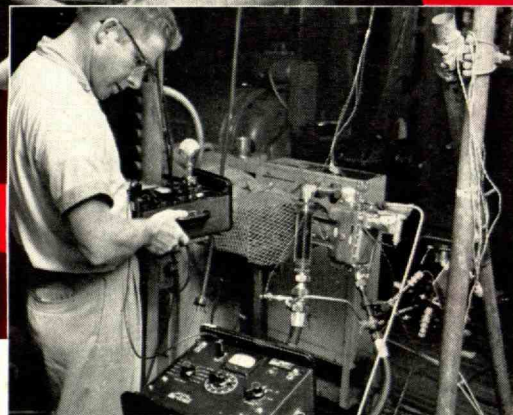
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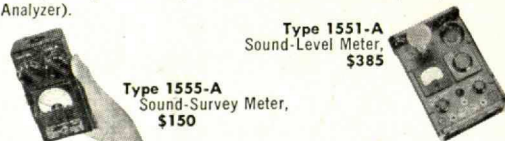
When does Sound Become Noise?

Photo Courtesy Lockheed Aircraft Corporation

Unless you can calibrate your ear, the only positive way to answer this question is by accurate measurement with instruments. Subjective results are often misleading and provide only partial answers. For accurate and complete results, industries specify General Radio sound-measuring equipment. This fully-integrated line features instruments for sound-level measurements of either high-, medium-, or low-level sounds; sound analyzers for either narrow- or wide-band analysis; impact-noise analyzers; vibration meters and analyzers; and a complete line of accessories to further extend system versatility. Write for "The Sound Bulletin" and get the complete story on sound measurement.

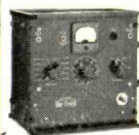


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